

ATHLETIC JOURNAL

Vol. XXII, No. 9

May, 1942



Swimming As a Factor
In Winning the War
Frederick W. Luchting, Ph.D.

More About the "Y"
Walter J. Hentling

Baseball Illustrated

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The ATHLETIC JOURNAL

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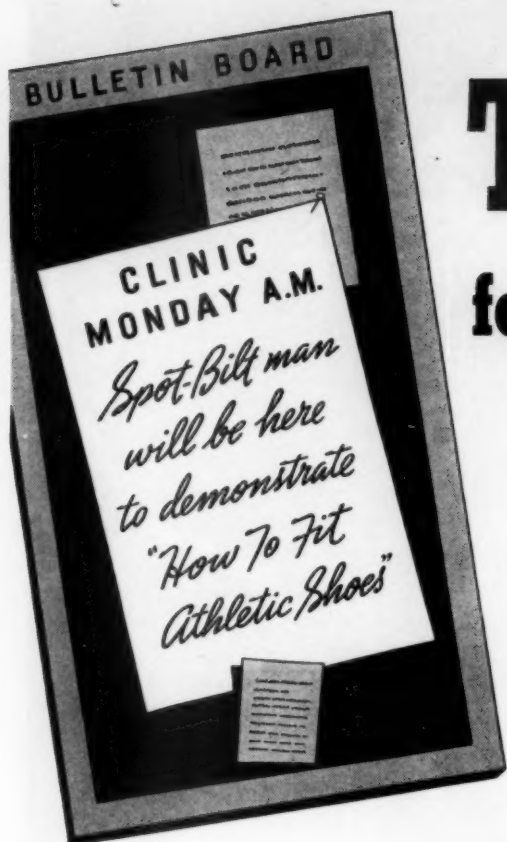
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THE FINEST IN ATHLETIC SHOES



What the Schools Are Doing

The Intramural "V" Physical Fitness Test at the University of Illinois

By Hartley D. Price

Director of Intramural Sports and Varsity
Gymnastic Coach, University of Illinois

A WELL-ORGANIZED program of physical education should be sufficiently flexible that it may be adapted to changing conditions. The objectives need not necessarily change, but the emphasis may and very likely will. The remote objectives might be the development of the effectively integrated individual in matters of health, recreation, character and citizenship. The effectively integrated individual should be able to make adequate adjustment to himself, to objects and events, and to other people. The intermediate objectives which lead to effective adjustment in peace or in war might be stated as: 1. The development of organic power. 2. The development of neuromuscular control. 3. The emotional development. 4. The interpretative development.

The immediate objectives are concerned with the participation of the individual in actual activities which are predominately interesting to the individual himself.

The individual then, in order to make adequate adjustment to himself, to objects and events and to other people needs wise leadership which may permit and encourage participation in activities according to social and hygienic standards and present needs.

The efficient leader, then, should adapt his program to changing needs and conditions. He should recognize fully the need for the development and maintenance of mental and physical fitness and endurance of the highest order, especially in times of national emergency. Hence his program in war time is planned and carried on with endurance as the ultimate goal.

The present day is not the time on which to waste precious minutes in reviewing with alarm and in regretting the fact that physical educators have failed during the past twenty years to sell the idea of physical fitness for life. Rather, in view of immediate needs, it seems necessary to forget past failures and to concentrate on future successes. The trained leader, wide awake to the urgent needs of the present, should bend every effort to promote endurance among every indi-

vidual of every age in our country. Endurance must be emphasized, if we are to give the best account of ourselves both on the fighting front and on the home front.

Here at the University of Illinois every effort is being made to emphasize and to sell the rugged program. Douglas Mills, director of athletics, has stressed the fact that there will be no curtailment of activities. Dr. T. K. Cureton, director of the physical fitness clinic, is conducting a clinic from which it is hoped will emerge valuable data in regard to physical fitness. Glenn Law, assistant wrestling coach, has organized a "20 to 44" Club, wherein an attempt is being made to condition all interested applicants within those age limits. Herbert W. Craig, assistant professor in men's physical education and Harold E. Kenney, varsity wrestling coach, have organized and popularized a rough-and-tumble sports course in the summer curriculum. Max Chapman, director of recreational sports, is putting emphasis on rugged activities in the sports clubs. Dr. S. C. Staley and Dr. G. T. Stafford have set up a plan also in the service curriculum, whereby an attempt is being made to measure physically inferior individuals by a screen test, and to bring them up to standard. Dr. Staley is serving in an advisory physical education capacity for the armed forces, while Dr. Stafford is the inventor of the "Trainasium," a conditioning apparatus greatly in favor with the armed forces.

To the Illinois intramural program, ice hockey and weight lifting have been added. The Illini Physical Fitness "V" Test, a new phase of the intramural program, stresses endurance, strength, power, agility, flexibility and balance, and is certainly part of a program which shows adaptation to present needs.

It seems important that the varsity sports program should be retained and even increased in scope, but in this field, too, the maintenance of physical fitness and endurance throughout life should be the goal. Under wise leadership, inter-collegiate stars should respond favorably to appreciation for the need for lifetime physical fitness.

Activities in the intramural sports program, prior to the declaration of war, were: fall softball, fall tennis, fall golf, fall track, soccer, handball, bowling, water polo, turkey run, volleyball, fencing, table tennis, basketball, ice hockey, badminton, wrestling, spring tennis, swimming, horse-shoes, spring softball, gymnastics, spring

(Continued on page 46)

More About the "Y"

By Walter J. Hunting
Denfeld High School, Duluth, Minnesota

THE apparent interest that was manifested in my article on the "Y" formation in the March issue has brought many requests to me for further information and plays. So many favorable letters were received that a follow-up article was deemed advisable rather than answering each request individually. Little did I realize that coaches would take interest in an article of this type to the extent that they would be trying the formation as their offense. Since they have, I am only too glad to follow it up with this article, going into detail more about the system and then answering the most important questions that have arisen pertaining to it.

A large number of coaches have signified their desire to make a change to some other system than the one they were using, and believed the "Y" formation was worth trying. One of the best things that I have found about this formation is the ease with which it may be used in conjunction with almost any system that is in existence today. It is an excellent formation in itself, or it may be used very easily as a prime formation from which a coach may very easily shift his team into the formation that he has been using. By doing this, he prevents a complete change over in to a new system, and gives himself a chance to see just how well he likes the "Y" as a formation in itself. That is the way I first used it; for most of the time, I had my 3 and 4 men shifting with a two-count shift from one side or the other into a single wing-back formation. Of course, after a shift of this type a pause of one second was necessary. To get away from that pause, I developed and used more plays from my prime formation.

There is one complete phase of the offense that I did not mention in the original article, and that is the possibility of direct pass plays from the prime formation. You will notice that all plays and variations given in the March issue started with the

quarterback handling the ball on indirect passes. Another separate set of plays in which use is made of a direct pass is possible when the quarterback 3 is used as the man in motion instead of the 4 man. Plays of this type are included in the accompanying diagrams. As soon as 3 starts to move, it appears to the defense that he might have the ball. The quarterback, 3, might be a good man to run with the ball or pass on reverse plays. If he is placed in motion instead of 4, he could stop quickly in the wing-back position, reverse, or keep on going for plays to the strong side. As soon as he starts moving out from under the center, it is possible to have the ball passed to any of the other three men.

The most important questions that were sent in are as follows:

Question 1: What are some of the fine points necessary to coach this type of offense?

Answer: I do not believe that the "Y" differs in this respect from any other system. All of us know we must take the material on hand and do the best we can with it. I have always placed the best back in the 1 position, the fullback in 2 position, the quarterback in 3 and the blocking back in 4. These men may be changed just as the team comes out of the huddle, if one desires them in another position for certain plays.

Question 2: What timing do you have in the backfield?

Answer: Probably the most essential thing in the execution of plays of this type is the proper timing. This will come only through practice, for the ball is not snapped with any rhythmic count but varies from a quick snap, taking place as soon as the team gets set, to a delayed snap after the man in motion starts or gets in his flank position. This variation will work out with surprising smoothness after a short time, and it keeps the opponents from ever knowing when the ball is going to be snapped.

Question 3: Do you find this a strong passing formation?

Answer: It is an exceptionally strong passing formation, for you notice that there is a possible pass, either long or short, from almost every running play.

Question 4: What type of defenses have you met when using the "Y"?

Answer: Nearly all the teams have used a shifting 6-2-2-1 defense, but it has been necessary for them to keep their lines exceedingly tight, because of the possibility of quick opening plays over center and off tackle. The seven-man line was also used during some games.

Question 5: Where do you find the formation the strongest? The weakest?

Answer: The strongest thing about the entire system is that it keeps the opponents guessing at all times, and catches them off balance with types of plays that they do not expect. The plays for the team must be limited, however, if the individuals are not good ball-handlers. That is the place where the weakness will show up.

Question 6: What kind of variations do you use?

Answer: Besides the type of plays given in the March issue, and those given in this article, I use a few plays from a punt formation.

Question 7: What do you depend on mostly, line plays, runs around end or passes?

Answer: I have tried to develop my teams, so that they are reasonably strong in all of the above, and then after finding the phase of the game in which the opponents are weakest, I concentrate on those plays.

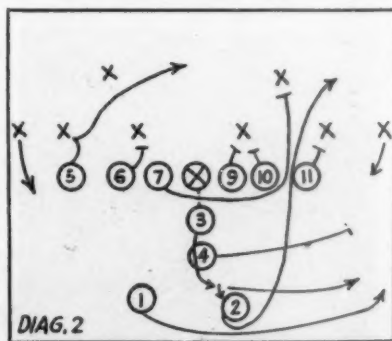
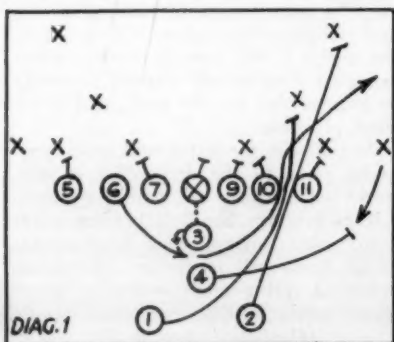
Question 8: Will you send us a copy of your plays from the prime formation and those used after the shift.

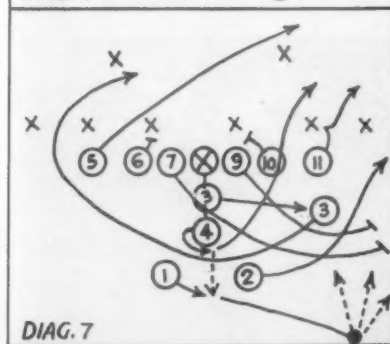
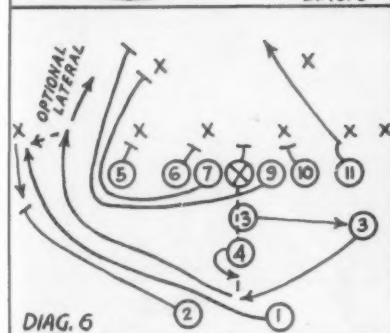
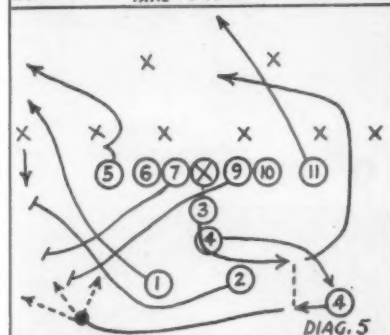
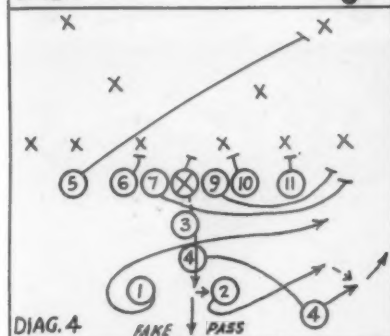
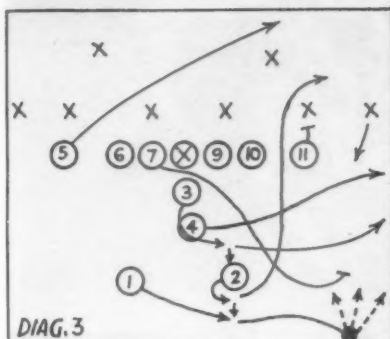
Answer: Since developing both the indirect-pass and direct-pass plays, I do not use any shift. The man in motion takes the place of any shift as you will notice in the following plays:

Diagram 1 shows a tackle-around play from the prime formation. Four starts in motion and takes the end out. One and 2 lead the play by driving off tackle with 6 coming around behind them, after receiving the ball from 3.

In Diagram 2 a spinner inside tackle by 2 is illustrated. Just after 4 starts in motion to take the end out, the ball is snapped to 3 who runs back and hands it to 2, and then continues around the end for a fake. Two spins, fakes to 1, and then continues around into the line. Guard 7 comes out and leads the play.

Diagram 3 shows a pass as a take-off





on the play shown in Diagram 2. Three gets the ball, runs back and hands it to 2 who spins and hands it to 1. One then continues out and throws to any one of the receivers as shown in the diagram. This play and that shown in Diagram 2 form a splendid series with that shown in Illustration 3 in the March issue.

A spinner around the end with a lateral is shown in Diagram 4. After 4 runs out as shown, the ball is snapped to 3 who runs straight back and hands it to 2. Both 1 and 2 pivot. The two guards 7 and 9 form the interference with 1. Two does not lateral to 4 until necessary.

Diagram 5 shows a pass to the weak side. Four sets himself out in the flat as shown. Three gets the ball, runs back and hands it to 4 while both are on the run. Four runs on and out to the left and passes as shown. Guards 7 and 9 pull out for protection.

A short reverse to the weak side is illustrated in Diagram 6. The ball is snapped to 4 just as 3 reaches his wing-back position. Three then reverses and gets the ball from 4. Two takes the end out with the help of 1. Guards 7 and 9 pull out for interference.

Diagram 7 shows a fake reverse to the weak side with a pass to the strong side. Three reverses as shown, fakes receiving the ball and continues around. The ball is lateralled to 1 by 4, who continues out for a pass to any of the potential receivers as shown.

In the fake half spin over center shown in Diagram 8, 1 gets the ball on a direct pass, fakes to 2 and drives back over center with 4 leading the play. The ball is snapped just as 3 starts in motion.

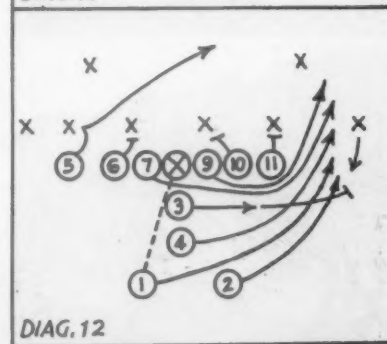
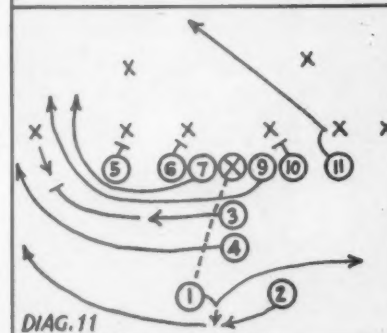
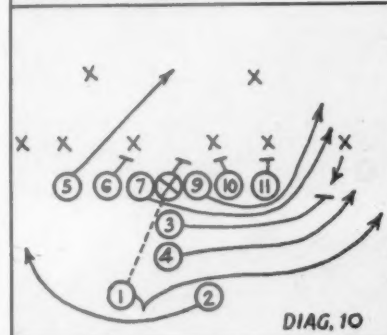
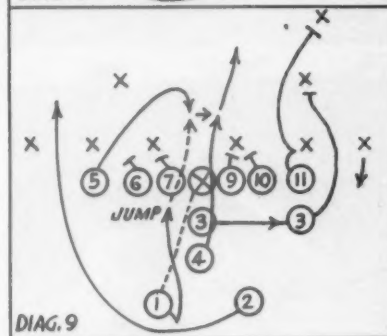
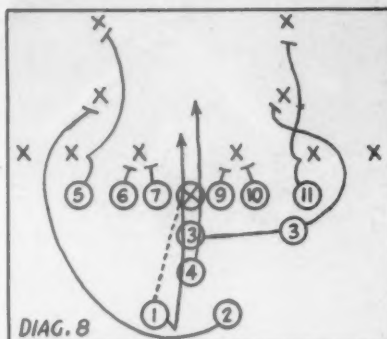
Diagram 9 shows a take-off pass on the play shown in Diagram 8. The play is the same except when 1 reaches the line, he jumps and passes to 5, who laterals to 4.

Diagram 10 shows a sweeping end run to the strong side. After 3 moves out, the ball is snapped directly to 1, who runs to the right with 7, 9, 3 and 4 running interference. Two fakes, receiving the ball as he passes to his left.

Diagram 11 shows a take-off on that shown in Diagram 10 with a single reverse to the left resulting. Just after 3 moves out to his left, the ball is passed to 1. Two receives the ball from 1 as 2 and 1 pass each other. Interference is led by 7, 9, 3 and 4.

Diagram 12 shows a driving slant play between the defensive tackle and end. Just as 3 moves out, the ball is passed to 1. The backfield 2, 3 and 4 combine to drive the end out. The defensive tackle is taken in by the right end 11 and the guards 7 and 9. One drives straight between those running interference for him.

The original article, referred to above, appeared in the March issue. Those interested in securing the preceding article are urged to write us at once as only a few copies are available. Editor's Note.



Glimpses of National Collegiate Athletic Association Performers at the 1941 Meet, Stanford University

The Javelin

Illustration 1. The thrower, as he takes his last stride before the toss, brings his right shoulder back to aid in the full backward extension of his arm. Note the javelin is carried straight along the line of the throw and the left arm is extended loosely so as to be in position to aid in driving the right shoulder through as the throw is made.

Illustration 2. The left foot strikes the ground as the thrower continues the action of drawing back the arm and shoulder. the carry of the javelin does not deviate from the line of the throw.

Illustration 3. Apparently a hop has been taken on the left foot to bring the thrower into throwing position and the throw has begun. Note the position of the right leg and foot especially, that the thrower is turning his head to the left, and that the left arm is being whipped back and down to help in bringing the right shoulder forward and up. The point of the javelin may be turned slightly to the left which means the thrower has lost some control during this final hop action.

Illustration 4. The fine follow-through shown in this illustration does not substantiate our fears that the javelin point wavered from the line of flight. The thrower apparently has exerted all of his power in a pull straight through the line of the throw. The picture gives one the impression of great poise and relaxation on the part of the thrower. The left arm has been used to great advantage.

The Shot-Put

Illustration 5. The shot is held rather high above the shoulder. An exceptionally long hop is being taken across the ring. The body angle and the position of the relaxed left arm are excellent.





Illustration 6. At the front of the ring in putting position, the putter is coiled to strike with all the power at his command as can be readily seen from the flexed legs, the position of the right arm behind the shot, and the left arm starting to whip back and add impetus to the right shoulder action.

Illustration 7. The power is applied. As the right leg and arm drive the shot upward and onward, additional force is given to the drive by the pull on the spikes of the left foot as the left knee is straightened.

Illustration 8. The putter does not reverse. After the shot has left his hand, the right foot is dragged up toward the toe board by the force of his effort. This picture shows very clearly the fine play of the shoulder muscles during the action.

The High Jump

Illustration 9. This is a good exemplification of some of the fine points of the take-off in the high jump. The jumper is checking his forward momentum and converting it into a lift by a sharp raising of the knee of his leading leg (the right) and a correspondingly sharp up-swing of his flexed left arm. Not only do these actions check his forward motion, but they serve to bring his weight directly over his jumping leg, the fundamental requisite of success in high jumping.

Illustration 10. The jumper has brought his right arm up and forward to aid his lift and to assist in turning his body. Note that both arms have preceded his body across the bar.

Illustration 11. The turn completed, descent into the pit begins. The right arm trails behind the sharp turn of the body which has lifted the hips clear of the bar.

Illustration 12. A perfect three-point landing on both hands and the jumping (left) foot. No, the young man did not lose his right shoe through the violence of the effort. He started without it, an old Johnnie Wilson custom.

The Pole Vault

Illustration 13. The vaulter (Jack De-field of Minnesota) has just about completed the "lag" following which the legs catch up to, and pass the swinging body. His position on the pole is excellent. All of his weight is directly below his hands, thus affording the benefit of a full lift by the arms when the pull-up is started. Both knees are flexed at this stage, a factor which aids in keeping the weight below the hands in this case.

Illustration 14. The straightening of the take-off leg has been delayed seemingly too long and this or some other factor has caused the vaulter to go to the left instead of straight ahead during the balance of the vaulting effort.

Illustration 15. The feet are commendably high and apparently still going up.





However, the influence of that earlier left twist is still in evidence.

Illustration 16. A good clearance style. The angle at which this picture was taken does not give a very definite idea of just where the vaulter's highest point of clearance was in relation to the crossbar. However, there can be little doubt that the masterly style in which he finished this try, his work in the air, saved a vault which might have been lost by the mischance of a faulty turn to the left in its early stages, evidences of which seem to linger as the vaulter heads for the left side of the pit as he starts downward.

The Discus Throw

Illustration 17. This group of discus pictures does not give us anything of the intermediate action of the throw. It is noteworthy that the thrower starts at the back of the circle, facing away from the direction of his throw. He is holding the platter parallel to the ground when his arm is at full rearward extension rather than at the right angle which most present-day throwers favor. The left arm is drawn across the chest.

Illustration 18. The thrower has pivoted on the left foot and the picture leaves no doubt that he is in full control of the job in hand. The driving, bent legs; the body angle; the trailing right arm; and the left arm, held in readiness to do its part when the time comes; all these are ample evidence of that.

Illustrations 19 and 20. These illustrations are good examples of the equilibrium and relaxation that the thrower must maintain throughout the action, even while exerting his utmost effort.



Some Suggestions for Track and Field During the Emergency

By Thomas W. Botts

Assistant Track Coach, University of Missouri

AT a time when budgetary savings seem to be in order and athletic programs are in some quarters being restricted, it is well that we, as track coaches, take stock of the situation. There have been disquieting reports from some sections and individual schools, that the track program, due largely to the tire shortage, is being greatly curtailed or entirely abandoned during the emergency. It is, therefore, necessary that we track coaches carry on the sport as best we may, and at the same time contribute as much as possible toward the physical fitness and morale of the nation.

While track does not in many localities have the crowd appeal possessed by contact sports, due partly to conditions

within the control of coaches and administrators, and partly to conditions beyond their control, it contributes, in the opinion of many leading authorities, more to the individual than any other major sport. These contributions are in the form of increased organic strength and endurance, physical and moral courage, appreciation of clean living, comparative freedom from handicapping injuries and a sense of personal responsibility for the individual's own success or failure, relative to his ability. There is a place in track for boys of every type of build and physical ability. The sport may be administered in such a way that almost an unlimited number of men may participate.

If for no other reason than its unex-

celled value as a body builder, coaches and administrators should make every effort to keep alive and vitalize track and field in their own institutions.

Several suggestions come to mind which might help schools, especially high schools, where tire rationing has limited the schedule.

1. Provide as much intramural and intrasquad competition as possible. If the staff coaches are not available have varsity members coach the intramural teams. Give them effective instruction and get them into condition. Award more than the usual three places to encourage participation.

2. Arrange postal meets with other schools. A surprising amount of interest

may be generated in this way. Publicize the results. Give five places with three men from each school in each event. Spread participation.

3. Schedule opponents near you regardless of conference affiliation. Find some way of equalizing competition between small and large schools in dual meets.

4. Make every effort to send the boys who have earned the privilege to the district and state meets, by rail or bus if

necessary. It is a good investment for the boy and also for your sports program. Often boys who are interested will be willing and glad to pay a part, or all of their expenses to such a meet. The least we can do is to encourage them and give them the best we have in us as coaches.

A sport in which physical fitness and self-discipline count for so much, cannot help being benefited in the long run by this period of national emergency, if we but give it support and encouragement.

The simpler life which is being forced upon us, and the return to the use of leg power for transportation will surely produce more interest and more and better track and field men. A sport based largely on the idea of "sport for sport's sake" and on the "joy of effort" needs but our faith and everlasting effort to reach new and greater heights of interest and participation. Hard work guided by an active imagination will carry us through the trying days ahead.

Swimming as a Factor in Winning the War

By Frederick W. Luehring, Ph.D.

Professor of Physical Education, University of Pennsylvania

FOR Americans, most of the fighting in this war is concentrated on the water, under the water, over the water, or beyond the water. To make the utmost progress in winning the war requires the transportation by ships and by air of millions of America's fighting men over thousands of miles of ocean. This is necessary if we are to realize our objective in taking the fighting to the shores of our enemies. Sudden and unexpected immersions in the ocean are inevitable with the sinking of our ships, or the downing of our planes.

Soldiers, sailors, and airmen, officers and men alike, who cannot swim or whose skills in swimming are unsuited to war requirements are only partially prepared to serve their country or to protect themselves. Appropriate swimming for war-time needs can be taught and learned on a large scale basis. Great progress can be made in a relatively short period of training. Even non-swimmers can learn much that will give them greater survival ability in the water and greater assurance of success in overcoming the enemy.

The importance of skill in the water for military ends is by no means new. Ancient literature includes abundant instances. In more recent times its importance has been accentuated. In 1555 Olaus Magnus reported that the Norwegians had developed extraordinary swimmers who could swim in armor, take it off under water, and thereafter escape from the enemy. Perhaps the most outstanding early contribution to the literature on military swimming in Germany was made in 1817 by General von Pfuell, who established a plan of swimming for the entire Prussian army in the early nineteenth century. Von Pfuell also was instrumental in setting up portable floating swimming pool units in many of the streams and lakes of Germany situated contiguous to military camps. In 1823 Count Courtivron, a captain in the French

IN addition to serving admirably the institutions with which he has been connected, Dr. Luehring has contributed much to extra-curricular activities. He served as chairman of the N.C.A.A. Swimming Rules Committee for twenty-one years and on the American Olympic Swimming Committee ten years. Athletic and physical education literature have been greatly benefited by his more than fifty professional articles and reports, by his book, Swimming Pool Standards, which received the 1940 award from the American Academy of Physical Education, and by his chapter on Swimming as a Military Accomplishment in Dr. J. E. Raycroft's, Mass Physical Training.

army wrote a book on swimming in peace and war. Max Hoderlein, a captain in the Bavarian Infantry, wrote a book on swimming in 1832 and showed a floating pool near an army garrison at Wurzburg.

In our country in 1881 Edward S. Farrow prepared a system of swimming for the cadets of our West Point Military Academy and other military colleges. A survey of swimming and life saving tests made by the writer in 1916 indicated that many colleges and universities required instruction in swimming and water safety, including swimming tests. It is surprising to note that the Academies at West Point and at Annapolis required swimming, but they did not have life-saving requirements or teach life saving at that time. In 1919 the author conducted a swimming school for military units at Camp Benning. The detailed outline of objectives, functional analysis of knowledge, skills and teaching procedures are carefully related to military needs. The strokes having emergency military value were analyzed to facilitate mass methods of teaching in land and water drill. Following this, the detailed plan of instruction was formulated by the writer into a chapter entitled "Swimming as a Military Accomplishment" which appeared in Raycroft's *Mass Physical Train-*

ing, published by the United States Infantry Association in 1920.

The reasons for discontinuing a military swimming program are obvious. We had fought a war to end war. We had arrived at an indefinite, if not a permanent state of peace, and therefore emphasis was directed toward peace-time living. Swimming is as necessary in peace time as in war time, but this is not the place to go into that argument. The fact is that another war is upon us, and swimming for military purposes, especially for saving the lives of our own men, if not for drowning the opponents, is a crying need. It is even more important now than it was in the last war since the hazards on, in, above, and beyond the water are terrifyingly greater than one can comprehend.

The present war gives abundant evidence of the importance of knowledge, skills, and experiences in watersmanship. Almost every sinking of a ship by bombing or torpedoing results in great loss of life. In these circumstances endurance swimming, floating, aquatic breathing or breath control are of the utmost importance for survival. Surely the men on our oil tankers, on our merchant marine, and on our fighting craft of all kinds would profit by being, at least, reasonably proficient in swimming and diving. It is a shocking revelation that, in one of our large naval training stations, 60 per cent of the men inducted into the service are unable to swim. It is noteworthy, also, that the percentage is even greater, 80 per cent, among the negro sailors.

The large percentage of non-swimmers among enlisted and drafted men brought about the consideration of the question by the American Association of Health, Physical Education and Recreation at the annual meetings held in New Orleans April 15, 1942. The following resolutions of the General Policies Committee were the result of their deliberations:

WHEREAS evidence is clear that approximately fifty per cent of our military forces can not swim, and

WHEREAS swimming is not now taught to all boys and girls of high school age,

THEREFORE BE IT RESOLVED,

1. That schools and colleges give increased attention to instruction in this phase of physical education, and

2. That suitable facilities be provided by communities and institutions to realize the purpose of this essential activity.

Our enemies have not overlooked the importance of such aquatic skills even as an offensive weapon. In the siege of Hong Kong the Japanese 1932 Olympic breast-stroke champion Koike, with a group of associates trained in swimming, destroyed dangerous floating mines in order that the Japanese forces could more readily overcome this British stronghold (*Readers' Digest*, April 1942, page 11). Later in the attack on Singapore, after the British had destroyed the causeway leading from the island to the mainland, a contingent of Japanese engineers who were capable swimmers soon restored the causeway to a usable state.

Swimming has been useful in the transfer of some of our fighting forces from Bataan to Corregidor and in the heroic survival of the crews from torpedoed tankers and other ships. Inadequate preparation for such swimming experiences has been correspondingly disastrous. In Russia, a part of the military training requirement is for a soldier to swim for fifty meters with a rifle. They have relatively poorer facilities than we have in many other respects, but they obviously realize the advantage of swimming soldiers or sailors, rather than sinking soldiers and sailors.

Among the swimming skills and experiences for war needs, the following tentative list may be suggested.

1. Learning emergency strokes and techniques as follows: breast stroke; back stroke; side stroke; sculling; treading water; floating.

All these strokes and stunts should be executed with and without full equipment. The breast and back stroke should be of the orthodox type. The front and back-crawl strokes and the butterfly breast-stroke are very useful skills, indeed, if it is necessary to reach an objective in a hurry.

2. Satisfactory breathing and breath control. Aquatic breathing consists of one way traffic—breathing in through the mouth and exhaling through the nose or nose and mouth.

3. Instruction in the use and care of emergency life preservers and other safety devices.

4. Instruction in undressing in deep water. This may be tried after the swimmer has learned to tread water and has learned one or more swimming strokes. Heavy shoes and trousers should be removed first.

5. Underwater swimming with and without clothes. This may be a highly important skill in case the sinking ship is surrounded by flaming oil. Ordinarily when entering water of unknown depth it may be best for a swimmer to enter it by jumping in feet first. In case of fire, however, it may be better to dive in head first and to continue swimming out beyond the range of the fire. It is more difficult to swim under water with clothes on.

6. Jumping into the water from diving boards of various heights and ultimately from a tower approximating the deck of a ship in height. This should be done with clothes on and without them.

7. Climbing out of the water with clothes on and without them by means of the Naval Ladder (commonly called a Jacob's Ladder), thus returning to the deck.

8. Appropriate life saving skills consisting of: Approaches; warding-off; breaking holds; carries.

Practice in warding-off a struggling victim or dangerous opponent consists of using the arms and legs to deflect his grasp and to help in disabling and overcoming an enemy.

9. Instruction and tests in the execution of the Shafer method of resuscitation and correlated first-aid treatment.

10. It is highly desirable that skilled swimmers be given some individual and group instruction in night swimming, using noiseless breast, side, and sculling strokes. It is difficult to see a swimmer in the water at night. Experience of this kind should be valuable for scouting and unexpected landings.

11. Boat handling experience including launching, entering and leaving, rowing, maneuvering, landing, and mooring.

12. Aquatic leadership experience including practice teaching and assisting others in acquiring aquatic skills.

As soon as the learner has acquired a fair degree of all-round competence, he should be encouraged to face situations in which he tries to overcome odds comparable to fighting or warding off two or three men at a time. He should be able to swim with clothes on, and at the same time carry a rifle or carry a helpless associate in deep water. Valuable experience in all-round watermanship may also be gained by playing American intercollegiate softball water polo, the greatest fighting game ever developed. It combines wrestling, warding off, diving, speed swimming, and team work in an excellent manner. This game which has been prominent in Eastern intercollegiate circles for twenty-five years was recently given up as being too dangerous. Personally, I would rather trust my life in an emergency to a good water polo player than to two or more regulation life savers. This game is admirably suited to the development of the fighting spirit, and unquestionably it develops marked intestinal fortitude. The

game should be restored and widely introduced into the military and naval training camps.

It should be remembered that our main purpose is democratic in character. Instead of developing and training Olympic champion swimmers, it is more important that every one of our fighters, including the negroes, be given appropriate instruction and experience in the water with and without life preserver and with and without full fighting equipment. Even the non-swimmer can have his survival ability greatly improved by instruction and participation suited to his level of ability. Unofficial reports filtering in from Pearl Harbor and from torpedoed ships disclose that many non-swimmers might have been saved by some elementary forms of breath control, by crude skills in floating and even by very poor modes of aquatic locomotion, sufficient to reach floating debris, or even by having learned how to co-operate with those who were trying to rescue them. Even the non-swimmer should be ducked into the water from time to time with full equipment, to learn to do his breathing by way of the mouth and to time it rhythmically with the waves.

To provide adequately for military swimming requires ability to analyze a program of activities, organize a staff and provide necessary facilities and supplies. An analysis should be made of the aquatic knowledge, skills, and experiences that the fighting man should possess. This should be set up in an instructional program on progressive levels suited to the needs and abilities of our men. Co-ordinate with this is the necessity of providing as rapidly as possible a staff of instructors. These may be recruited from coaches and teachers of swimming in schools, colleges, Y.M.C.A.'s, Red Cross, etc., and from the outstanding swimmers from interscholastic, intercollegiate and other competitive teams, or organizations and clubs. Important help in this emergency should be provided by the National Committee on Aquatic Leadership of the American Association for Health, Physical Education and Recreation which for the past three years has been trying to upgrade aquatic leadership throughout the country. The College and Interscholastic Swimming Coaches Associations include many of the ablest men in the instructional field.

Perhaps the biggest obstacle presents itself in the form of inadequate facilities in our camps and stations. Every military camp, naval training station or air base, should have at least one but preferably three or more swimming pool units. These need not be expensive nor elaborate permanent structures. They should be built in multiple units providing for diversified needs. There should be large shallow areas for teaching beginners the art of swimming on the horizontal plane. The fundamental strokes can be readily and safely taught in

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The Shift in Coaching Emphasis

By H. C. Carlson, M.D.

Director, Student Health Service, University of Pittsburgh

THE techniques and finer mechanics of basketball and football were not as generally known before the 1930's as they are now. Coaching schools, books and Athletic Journals have furthered a greater diffusion of the ever-advancing knowledge. In the preceding era the coaches more than compensated for this lack in technique by spending much time upon the spiritual side of athletics. There was a greater amount of talk, and therefore practice, about sacrifice, teamwork, spirit, perseverance, courage, faith, enthusiasm, reliability, tenacity and many other virtues of which we hear less expressed in this later era. Many players at their first college practice opened wide their eyes, their jaws dropped, and even their ears seemed to flare back, so that they might receive better the new revelations of their sport. They came to college with a practiced spiritual background and they were intensely receptive to new playing techniques.

The high school coach now knows as much of the playing techniques as, or more than, the college coach. By comparison there is now less time to spend upon the spiritual side of athletics. The first day at college, practice now is just another day in the grind of mastering techniques. Now the college coach must shift greater emphasis back to the spiritual side. Nobody questions the advance of efficient techniques of today, but nobody can say there is better spirit now than they had in the preceding era. There are more players better trained in the athletic skills, but they still need the spiritual background to be molded into great teams.

The coach who fails to take cognizance of this balance between spirit and techniques pays a terrific penalty. The former exclusive college techniques are now being worked in high school. It is up to the colleges to pick up the previously emphasized fundamentals of high school. Both are essential to success in any league today. The athletic parallel is found elsewhere in the family and in society.

Ideals and material assets parallel the spiritual side and the techniques of athletics. In less affluent days, the good family holds together through higher ideals and a commonness of purpose, though there be less in the larder. As the more affluent shift comes, there is less time for meeting together in the discussion of ideals or the whys and wherefores of existence. Material aims are planted early in the offspring and they are symbolized by the hurrying pater. The teacher had just been knocked down by a flock of students hurrying out of the school. "A sympathetic

bystander had said, "I wonder what they learn in that school?" The teacher was more realistic, because he wondered what they had learned at home.

Fortunately we have competitive athletics. They symbolize our strengths and weaknesses. The scores suggest the need of quick remedial action, if we fail to win. We go back to fundamentals, but sometimes we forget they have moved forward, so that there are now fundamentals back of the apparent fundamentals of today. There are fundamentals which make the fundamentals work. The spiritual side is necessary to successful techniques.

The Three Essentials for Every Successful Coach

The three essentials for every successful coach and player are training, condition and application. Training represents ability, mastery of the skills, the factor of the past with all of its acquisitions made ready to go all out. Condition represents endurance, the factor of the present and the ability to utilize the acquired skills for a required length of time, or beyond that, until the task is successfully finished. Application represents the emotional drive, the prophetic factor for the future, the force that combines execution of the skills with the completion of the tasks. The coach must give equal emphasis to these three factors. The neglect of anyone may be the cause of defeat.

We must allot time and thought to the factors of training, condition and application. There are innumerable fundamentals or essential details of each required for their full fruition. They can include the shifts from the spiritual to the technical and the reverse. The fluctuations which come with individuals and groups may be minimized by attention to the basic needs. When there are no general endowments of these required qualities then the coaches must compensate by ever increasing attention to positive details. And again competitive athletics must point the way for other activities.

We must have training in ability and skills, but there must be outlets or expression through games with material supplies, just as in war we must have skills and machines. We must be conditioned to carry on, and this requires time and practice upon the things we must use, or with other things which can generate endurance. We must have application and emotional drive to ignite our possibilities and this requires ideals worth maintaining and fighting for.

We have seen the shift from the spiritual

to the technical in athletics, and from ideals to the material in our apparently bigger world. We have seen that we must recondition both our spiritual side and our ideals if we are to win. Competitive athletics can be the germ of greater achievements in other fields even though we accept them, as other little real essentials are accepted such as salt.

Where it is less common, salt is considered one of the greatest treasures. It has been written that the Italians in their Abyssinian conquest found some of Haile Selassie's vaulted treasures to be salt. Every modern knows that salt is used as a preservative. Hams, other than coaches, are preserved by salt. We say, "He has his financial security salted away." Some people are known as the salt of the earth. We know that salt is essential to our living processes. We accept salt as a commonplace thing, when its absence would mean our destruction. Between the ancient Arabs and Syrians it was considered as the bond of enduring pacts. When lasting agreements were executed, they were made by dipping their bread in salt. In friendship they spoke of the salt between them. In treachery they excused themselves because of the lack of salt in their bread.

Competitive athletics are the salt of our national existence. They are essential to our survival. They cannot be pushed aside, even though there is a difference in the interpretation of the timeliness and extent of their seasoning power. "On account of the salt among us," we must fulfill the mission of our athletic jobs. We must take up the slack of our shifts from the spiritual to the technical, and the shifts from ideals to material things. There must always be a healthy balance, though the scales shift back and forth. If tougher days come, we can return to the sustenance given by the spiritual side and by the higher ideals.

As we cannot idly sit aside and passively wait for success in athletics, we cannot follow that technique in other activities. We must improve our training, increase our condition and better our application upon the real fundamentals behind the apparent fundamentals of our jobs. We have dipped our bread in the salt of athletics. We are bound to give our best technical efforts, and even revert further to sacrifice our lives for the ideals that have allowed us to rise and maintain ourselves in progressive happiness. Whatever the shift in coaching emphasis, we should be trained, conditioned and emotionally fitted to meet the physical, mental and social demands made upon us, in the present and future.

The Teaching of Rhythm to Distance Runners

By Ford Hess

Coach, Garden City, Michigan, High School

WE have no evidence to indicate that the individual has been greatly altered through the centuries of his existence. The qualities that made for a good runner in prehistoric times are essentially the same today, irrespective of modern improvements in techniques. Therefore, it follows that the job of the cross-country or track coach is to know what these qualities are and how to use them.

Records of the past, of distance running especially, were made by men who were far superior to the majority of their competitors. They were even markedly superior to their immediate runners-up. Today this does not appear to be true. Even when one considers the consistency with which Glenn Cunningham won mile races, it can not be forgotten that there were at least two other men of nearly equal caliber to press him to the finish.

Man's progress in foot racing is the result of many environmental conditions of direct and indirect nature. One of the most potent of the direct contributions has been the widespread distribution of good training procedures accomplished through competent coaching. What was yesterday available to the professional is today available to the novice runner. Out of all this has evolved the numerous foot-racing records held by runners the world over, especially the records for distance runs made by the athletes from Finland. The seemingly invincible array of distance runners that hail from this small country indicate that their ability lies in more than the hereditary qualities of the people. It points to advanced training procedures which, coupled with such inherited qualities, make for the record performances of these people in distance running. This fact offers a challenge to every American cross-country coach and runner—a challenge to learn what it is that contributes so greatly to their success in distance running.

Such factors as endurance, pace judgment, and speed are generally considered as the core of the distance runners' training program.

It is the purpose of this article to present the physiological basis upon which I shall attempt to justify my contention that the factor of rhythm is the most important single factor with which any cross-country coach or distance runner should be concerned. The teaching of this rhythm thus becomes as important as does the training for endurance, speed, and pace

judgment.

The following terms should be defined for a more complete understanding of the problem: Rhythm, Factor, Training Program, Distance or Cross-Country Running.

Rhythm: General definition: Rhythm is a term used in this study to refer to the repetition of movement following a general pattern.

Specific definition: What I have termed rhythm is simply the act of breathing, i.e., inhaling and exhaling in rhythm or timing to the steps and strides taken. Such a rhythm is achieved by inhaling on two steps or strides and exhaling on two steps or strides. Thus the general pattern is established and the movement (running) tends to follow this pattern.

Factor: I have accepted the term factor to imply or mean anything which one should consider as having a specific relationship to the subject under study.

Training Program: To train is to increase the power of the organism to that point whereby it (the organism) is able to "maintain an internal environment approaching that of the normal resting state even during severe work."¹ The actual things which one does in a deliberate and concerted attempt to increase the power of the organism to this peak constitutes what shall here be termed the training program.

Distance or Cross-Country Running: For purposes of this study the specific distance of two miles has been established arbitrarily as "a distance run." The distance of 10,000 meters (6¼ miles) has been arbitrarily established as constituting a cross-country run. These distances having been established arbitrarily; it follows that any distance within the range is to be considered as a distance or cross-country run, the two terms being used synonymously. The reason for selecting these two specific distances is that they represent the distances most commonly established today over which a majority of competing athletes in track and cross-country sports engage.

Endurance may be thought of as a term applied to a type of muscular effort wherein metabolism is stepped up above that of the normal resting stage, yet at the same time it is not so severe that it can be continued for only a short time. In short, endurance exercise is a type of muscular

effort characterized by the factors of frequency and duration. The former establishes the rate at which the effort occurs, the latter determines the length of time in which it is carried out.

The limit to which an endurance exercise may be pursued depends upon numerous factors, the majority of which are peculiar to the individual, and a minority of which are peculiar to the environment in which the individual engages in the exercise. With the exception of such environmental conditions as would be present in the endurance activity of mountain climbing, wherein atmospheric conditions demand a particular adjustment, we may dismiss any further discussion of such factors and concentrate on the individual factors. Metabolic rate for an individual during an exercise of endurance is considerably increased above the normal; however, recent studies reveal that training greatly enables a person to continue quite vigorous muscular effort in spite of this raised metabolic rate. Generally speaking, when an individual is no longer able to continue an exercise, we say fatigue has been the factor responsible for this inability to continue muscular effort. Fatigue accompanies all types of muscular effort when that effort is continued frequently or for long durations of time to a point where the stimuli causing this muscular contraction occur so frequently as to cause tetanic contractions. However, when the stimuli occur in a steady, rhythmical manner the muscle tends to respond in a steady rhythmical manner. Muscular effort progressing in such a way may be continued for long periods of time without noticeable effects of fatigue. The reason for this lessened susceptibility to fatigue appears to be due to the fact that the period following the contraction is of sufficient duration to allow the contracting muscle time enough to prepare for the next stimulus. These rhythmic stimuli, called by Schneider "the rhythmic reflexes," are a fundamental property of the nervous system; and the building up of a series of such rhythmic reflexes, which contain no unnecessary motion, is a potent factor in preventing fatigue.

The purpose of a training program for distance running is to condition the body to a point where the fatigue, usually accompanying this type of exercise, will not manifest itself sufficiently, either during any phase of the training program, during

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¹ Schneider Physiology of Muscular Activity. W. B. Saunders Co., Phila., Pa., 1933.

Meet Your Neighbors from South America

By Fred W. Dickens

Director of Physical Education, Fundacion Ateneo De La Juventud, Buenos Aires

NOW that the Pan-American Championships are planned for this year in Buenos Aires, a review of the last South American Championships in Track and Field athletics with reference to the times made and the distances reached in the different events is of interest to those in the U. S. A. who are desirous of knowing how strong the competition

is to be in the basic program of the games.

The South American Championships in track and field are held every two years, these being held in an orderly sequence, first in one country, then in another, the countries taking part being, Argentina, Brazil, Chile, Uruguay and Peru. The so-called "Copa America" is disputed and competition between the A. B. C. countries

has been unusually keen since the inauguration of these competitions back in 1919. Argentina carried off the honors in the championships of 1922, 1924, 1926, 1929, 1931 and 1933. Chile took the Cup in the years 1919 and 1927 and Brazil won the high honor last year. Brazil has made marvelous strides in track and field technique in recent years and at the present time has many outstanding athletes.

Brazil began to show signs of life in 1922 at the Latin American Games held in Rio, first regional Olympics held in South America, sponsored by the International Olympic Committee. Count de Balliet Latour who has just recently passed on (Continued on page 42)

WHEN Mr. Dickens sent the accompanying article to us, the South American countries were preparing to welcome their neighbors from the North. Even if the games are not held it is well to know our neighbors.



Raul Ibarra, Argentine, the best distance man in South America.

Event	Primero 1st	Segundo 2d	Tercero 3d	Cuarto 4th	Perform. del ganad.
100 metros.....	Bento de Assis (B)	Ferraz (B)	Valenzuela (C)	Venini (A)	10 s. 8/10
200 metros.....	Bento de Assis (B)	Venini (A)	Valenzuela (C)	Slullitel (A)	21 s. 4/10
400 metros.....	Costa Ramos (B)	Da Silva (B)	Cuba (P)	Muñoz (C)	50 s. 2/10
800 metros.....	G. Huidobro (C)	Ferrere (C)	Yokota (C)	Da Costa (B)	1 m. 54 s. 2/10
1500 mts.....	G. Huidobro (C)	Ferrere (A)	Torres (C)	Gomes (B)	3 m. 58 s. 7/10
3000 mts.....	Ibarra (A)	Torres (C)	Cabrera (C)	Inostroza (C)	8 m. 39 s.
5000 mts.....	Ibarra (A)	Gorno (A)	Inostroza (C)	Millas (C)	14 m. 57 s. 1/5
10,000 metros.....	Ibarra (A)	Gorno (A)	Millas (C)	Inostroza (C)	30 m. 45 s.
110 metros vallas.....	Cunha (B)	Pereyra (B)	Jaime (U)	Mendes (B)	15 s. 1/10
400 metros vallas.....	Hoelzel (C)	Rozas (C)	Magalhães (B)	De Freitas (B)	56 s. 4/10
400 hurdles.....	Ibarra (A)	Inostroza (C)	Aldana (A)	Guíñez (A)	36 m. 11 s.
Cross-country.....	Palomeque (A)	Cuello (A)	Guíñez (A)	Macaya (C)	2 h. 3 m. 13 s. 3/5
Maratón.....	Hanning (C)	Mendes (B)	Poyo (A)	Castro (B)	1 m. 94
Salto en alto.....	Dyer (P)	Juárez (A)	Quesada (A)	Audicion (B)	7 m. 20
High jump.....	Pinto (B)	Tenorio (A)	Richard (B)	Ferrada (C)	15 m. 10
Salto triple.....	L. Castro (B)	I. Castro (B)	Reimer (C)	Ganeza (P)	4 m.
Hop, step and jump.....	Nitz (B)	Giorgi (B)	Pereira (B)	Neuwald (A)	14 m. 62
Salto con garrocha.....	Consigliieri (P)	Brodersen (C)	Camargo (C)	Vieyra (B)	46 m. 40
Pole vault.....	Falkenberg (B)	Becher (A)	Santibáñez (C)	Soldan (B)	59 m. 42
Lanz. de la bala.....	Naban (B)	Fuse (A)	Kleger (A)	Veloso (C)	49 m. 71
Shot.....	Brasil (B)	Chile (C)	Argentina (C)	Perú (C)	42 s. 3/10
Lanz. del disco.....	Chile (C)	Argentina (C)	Uruguay (C)		3 m. 21 s. 9/10
Lanz. de la jabalina.....	Ruegg (B)	Colin (C)	Brodersen (C)	Kistenmacher (A)	6411 puntos
Javalin.....					
Lanz. del martillo.....					
Hammer.....					
Posta de 4 por 100... Relay (400)					
Posta de 4 por 400... Relay (1600)					
Decathlon.....					

B = Brazil
A = Argentina

C = Chile
P = Peru

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Sport for Flying Personnel

A BOOK, *Medical Guide for Flying Personnel*, by Heinz Von Diringshofen, Oberstabsarzt der Luftwaffe, translated by Major Velyien E. Henderson, M.A., M.B., C.A.M.C., Retired, Professor of Pharmacology, University of Toronto, has come to hand. The book, we understand, was written for the benefit of German fliers but the British somehow intercepted the treatise and have passed copies on to some of the men in the R.A.F. The chapter on *Sport for Flying Personnel* should be of interest to us. We take the liberty of quoting the following:

"The practice of boxing and jiu-jitsu is strongly recommended for fliers. Boxing is an excellent exercise for developing respiration and circulation and strengthens the whole body. Both sports develop hardness, strengthen the fighting spirit, and teach, like all sports where two are opposed, i.e., fencing, quickness of observation and action. This is supremely true of jiu-jitsu.

"Since boxing and jiu-jitsu are also excellent methods of self-defense, they develop a calm self-control when one is insulted.

"Tennis is also recommended for fliers. If one is dexterous enough it is an excellent competitive sport, and watching the ball sharpens the estimation of distance of moving objects, so important to the flier.

"For fliers in fighter aeroplanes, who usually fight as a team of three, all those games which require teamwork—football, handball, and hockey—are good preparation for teamwork during the attack. They also strengthen the entire body."

We have for more than twenty years been suggesting through the medium of the *ATHLETIC JOURNAL* that sport training is a valuable auxiliary of military and naval training. There can be no question that the German and British armed forces recognize the truth of this statement. The men at the head of our own Army and Navy also believe that athletics are of value in time of war. In the November issue of the *ATHLETIC JOURNAL* we printed copies of letters received from Colonel Knox, the

Secretary of the Navy, General G. C. Marshall, Chief of Staff, U. S. Army, Lieutenant General Drum, Commanding Officer of the First Army, and other men whose opinions carry weight in matters pertaining to this subject. You may recall that General Marshall's statement read in part: "The athletically trained young men of this country, developed in muscular strength, general health, coordination, endurance, and leadership, have acquired the will to win in the face of opposition. These are qualities basically essential to the soldier. Athletic activities on playgrounds and in our high schools and colleges constitute an important contribution to the national defense."

The other day a naval officer stationed in Washington, wrote about these matters as follows: "We are stressing competitive athletics, I believe, even more than the Germans have done. We feel, of course, that there is nothing that will take the place of a 'will-to-win' spirit which these competitive athletics will give our boys. For this reason it is most alarming to us to note the great number of colleges that are giving up their sports programs. Personally, I feel this is most dangerous to our success in this war. I feel that it is a shame that so many schools have such a twisted and misguided conception of patriotism. They should be made to understand that the patriotic thing to do in this instance is to increase their athletic programs and even compel all students to take part in some competitive sport."

We are mentioning these matters again because there are still people who feel that the colleges and high schools should give up their athletics during the war period. Some of the college presidents, who have been eager to abandon their sports program during the war for financial reasons, may have done so in the name of patriotism. We trust that, if there be any such, they may know how at least one naval officer feels about this matter. We refer to the statement above which we have just quoted.

At a banquet recently a college coach who has just been given a leave of absence from his university to help carry on athletic training in the naval aviation program suggested that the colleges might well consider the advisability of giving up their athletics during this war. The speaker, we are sure, did not weigh his words or speak after having given the matter thorough consideration. Had he done so, it might have occurred to him that, if the Navy can afford to spend several million dollars for athletic training of potential Navy fliers, the schools and colleges can well afford to carry on their athletic programs for boys, many of whom will later be inducted into military and naval service.

The point we are making is this. The Army and Navy are carrying on their athletic programs at West Point and Annapolis and very properly so, we feel. The Army and Navy have been guaranteed athletic equipment for the men in the service. Army and Navy men from the top down favor the continuance of a certain amount of athletic sports during this war. The President of the United States has made his opinion regarding this matter known to the American people. We feel that the President,

and the Army and Navy and Federal Security Administrator, Paul McNutt, should decide whether it is our patriotic duty to carry on the school and college athletic programs for the duration and that the others, although they of course have the right to express an opinion, should not expect much consideration to be given their opinions.

Compulsory Physical Training

THE press recently reported that Mr. Lytleton B. P. Gould, special assistant to the Chief of the Bureau of Navigation, had reported that the average mark in arithmetic that a large number of Navy recruits in 1941 had attained was 44.2. The test which was taken by college and high school graduates and many others who had completed the grade courses, was in simple arithmetic. Attention was also called to the fact that the grades in English were far from satisfactory.

Attention might be called to the fact that most of the boys who attended school or college were required to study arithmetic. In other words, not very many who went through the grades, the secondary schools or the colleges were excused from classes in arithmetic.

Attention has frequently been called to the fact that a large number of conscripts in the Army failed to meet the physical standards set up by the Army for inductees. While a large number of the defects related to eyes and teeth, defects that are not remedial so far as physical training is concerned, yet some of the men who were rejected could have been made physically fit, had they been required to take physical training in school or college or both.

The American public is beginning to realize that in many of our states where compulsory physical training laws have been enacted, the laws have not been observed by the school authorities. There is more and more indication that our people feel that it was a mistake that physical training was not made compulsory from three to five times a week on the part of practically all of our school and college boys. Many of the institutions are correcting this mistake but too many are still inclined to take the attitude that it is not the business of an educational institution to conduct physical training programs. Most of the school and college authorities will permit those who want to play football or basketball or engage in the other sports to do so. They too often, however, fail to realize that the boys who do not care for athletics are the ones who need the training the most, but very little is done about this. Some seem to feel that if we were to make it impossible for the boys who like to play football, to play football, that thus we would get all of the boys who do not like to play football, into the game. This, of course, is foolish.

Returning to the subject of arithmetic, which we touched upon at the beginning of this editorial, we are not presuming to indict the school teachers who conducted the classes of arithmetic for the boys who

later failed miserably in the tests given by the Navy. Perhaps some blame should be placed on the school teachers, just as some of the blame for the defects, that the draft statistics show, may properly be attributed to the men and women who have been conducting physical education activities in the educational institution. The point that we want to emphasize, however, is this, that arithmetic is compulsory in the schools and physical education has not been compulsory in the real sense of the word. The arithmetic teachers do have a chance to teach arithmetic to all of the students. The physical training teachers do not have the opportunity of making all of their students physically fit by, and through, their physical training programs.

Swimming and Swimming Pools

IN this issue of the *ATHLETIC JOURNAL* there appears an article written by Dr. Fred Luehring dealing with swimming and swimming pools. Dr. Luehring makes a point that men entering the Navy should know how to swim. Of course this sounds reasonable and the school and college athletic men, especially the swimming coaches, have an opportunity of rendering a service to their country, as well as to their boys, by seeing that the latter are taught to swim before they are inducted into the service. The other day we drove by a municipal swimming pool in a small town in Illinois and the thought occurred to us that this was probably the only outdoor swimming pool in the county. We learned that, when this pool was opened in the summer, a competent swimming instructor was in charge. It further occurred to us that the boys in the nearby towns and in the surrounding country, many of whom will possibly later voluntarily enlist in the Navy, would like to learn to swim and would welcome a chance to make use of this pool to which we have referred. We pass this thought on for what it may be worth.

Overcoming Distractions

THE Chicago Tribune in a recent editorial in which the writer touched upon baseball in a lighter vein, a point was made that is worth considering. The writer of the editorial states: "Baseball, symbolizing man's conquest over distraction, has a note which, naturally enough, permits the opposing players and even the spectators to introduce additional harassments, as by the shouting of insults at the players."

We feel that the editor who penned these words touched upon a point that from a psychological standpoint is of interest to all coaches.

Following the other war, we recall a conversation that we had with a colonel who was commanding officer of an army cadet school. He stated that, before awarding commissions to the cadets, each man was asked to come down a long hall to the reviewing board at the other end. He stated that

one day a man ran this gauntlet, and when he approached the officers stopped at the right distance, snapped out a military salute, looked the officers in the eyes, and answered their questions directly and intelligently. After the interview had been closed, the colonel asked this young man some questions about himself and found that he was a famous athlete. This started the colonel in question wondering about the influence of athletics upon the training of the one whose experience we have just related. He stated that in the war in France he noticed that the athletic men were not distracted by enemy gun fire or barrages and his conclusion was this, that in athletics a boy may have to shoot the basket after a foul when the game depends upon his making a good shot; he may be called upon to kick the goal that means the winning or losing of a football game, or he may come to bat at the ninth inning with one on and the score tied, and have to concentrate on the job at hand.

Looking Ahead

WHILE we all agree that there will be time enough to worry about post-war affairs when this war is won, yet it may be all right for us now and then to attempt to realize what effect the war will have upon our lives in later years. We recall that after the other war we blamed nearly everything bad upon the war, and probably we will be, for a great many years, giving some thought to the effect that this war has had on future generations. With this preliminary statement, may we make one prognostication regarding our physical training work in the schools and colleges. This has to do with the influence of the physical training work that has been the basis of the military training that the Commandos in England receive. Perhaps it will be predicated somewhat on the qualities needed by the soldiers and civilians who are fighting a guerrilla warfare in Europe and Asia. It most assuredly will have some connection with the type of training now being conducted by the Navy in its four base centers at St. Mary's College, and the universities of Iowa, Georgia and North Carolina.

We have already called attention to the fact that the work at these four base centers has been laid out on broad lines. It includes all kinds of athletic training with the emphasis on fighting games. It, further, includes what, for a better name, may be called body-building exercises and also hard manual labor such as wood chopping and ditch digging.

Some of our pioneer physical educators years ago felt that competitive athletics had no place in the physical education scheme. We doubt if there are many such today. If there are any who harbor such beliefs, they would not approve of the work that will be done in the Navy base centers.

The men, for the most part, who have been elected as heads of physical departments in the schools and colleges are those who have come up the athletic way. By that we mean those who were prominently identified with competitive games, usually as contestants, or perhaps later as coaches.

In a few of the universities the work is divided between intercollegiate athletics and general physical education. In connection with our prognostication, we envisage a situation after this war that will be comparable to the situation that endured, let us say, before the First World War. The man who became head of the department of physical training or, as he was usually called, the director of the department of athletics, was invariably a man who had won his spurs in some team game. These men, generally speaking, had not been graduated from courses designed to train teachers for physical work. They, however, by and large, built up splendid programs. They, quite generally, were employed to conduct intercollegiate athletics, but of their own volition, they also tried to develop intramural athletics, required work, etc.

What we are trying to lead up to is this thought, that in the post-war period someone will have to take the responsibility of financing the physical education program in most of the educational institutions, much in the same way that the pioneers had to finance their own programs in the years gone by. The man who can do the job, and by that we mean not only the job of raising the money, but also of conducting the various activities, will be the one chosen to head up the executive department of the institution, so far as athletics are concerned. The men chosen will have to be all-around men, who can satisfy the governing bodies, as well as the general public, and who will be able to build up the work under conditions less favorable than those we have known for the most part in the last twenty years.

A Sports Poll Shows That Spectators Approve of Athletics for War-Time Preparedness

IN a poll, recently conducted for *Esquire Magazine* by two well-known sports writers, Ralph Cannon and Herb Graffis, the result indicated that the American people apparently believe that men who engage in competitive sports are apt to possess a type of courage that is needed in warfare, that 96 per cent apparently believe that we should continue our spectator sports as usual, and 65 per cent expressed the opinion that athletic training should not be supplanted by some phase of military training in the high schools and colleges. Further, 54 per cent expressed the opinion that football best develops the attributes most necessary in an effective soldier.

Apparently there is no need for any of us, who have been suggesting that our athletics are helping with the war effort, to apologize for our beliefs. We have in another editorial called attention to the fact that the President of the United States, Administrator McNutt, and the Army and Navy apparently want the colleges to carry on their athletic programs, when there is no conflict with Army or Navy interests. It is interesting now to learn that the great majority of our people feel that we should carry on these activities.

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Football Practice 3 to 5
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John Doe

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In these trying days, when fitness, alertness and initiative are of paramount importance, our nation appreciates more fully the work you have performed during the past years.

To those who are serving with the Armed Forces, we wish the same success in your new field as you have enjoyed in the past. Wherever you are, and wherever you may be, we wish you luck and a safe return, with thanks for a job well done.

THE P. GOLDSMITH SONS INC., Athletic Goods Manufacturers CINCINNATI, U.S.A.

The Easiest Basket in Basketball

By Glenn Gilkeson

Basketball Coach, Riverside, California, Junior College

YES. Good form is the elimination of all unnecessary movements. I said, as Stu Baller, now coach at Omaha University and I were holding a post-mortem on the previous night's basketball game.

Obviously, there are many difficult shots in the game of basketball, and some players seem to try to make them the hard way. What is the easiest way to score a basket? was his reply.

Just give me a tall man who can stand above all others and let him tip the ball into the basket. Those are the easiest two points I know of, was my retort.

Well, West Texas State has proven that point, Baller said.

But, I said, Why can't shorter and more agile boys be trained to tip the ball into the basket?

They can, was the reply.

If you have one tall man, or are fortunate enough to have a tall team, many hours are spent teaching these tall players the art of tipping the ball into the basket, obviously taking advantage of their invaluable height. A good many exceptionally tall men, however, do not have the

necessary physical co-ordination and skill to become accurate at tipping the ball into the basket; they simply out-reach their shorter opponents.

Here at Riverside Junior College we do not have that advantageous asset known as height. Naturally, we have a difficult time recovering the ball from the backboard. A good percentage of our field goals, however, are the result of tip-in shots.

Playing against teams much taller, we must get the ball under our own basket, and many times the only way we can do it is by tipping. Sometimes the ball is tipped half a dozen times before a score is made, or the opponents recover possession of the ball. Our players are too short to get both hands on the ball; if we do not tip it, the opponents are sure to recover the ball. The fans are all on their feet screaming as the ball is being repeatedly tipped around the basket.

Almost every local player here in Riverside has learned the one-hand-push shot. They learn it as youngsters at the Y.M.C.A. from Coach Jim Melton, who is an enthusiastic advocate of the one-hand shot.

A player's skill with the one-hand shot readily transfers itself into the technique of tipping the ball.

First, we teach players how to tip the ball with both hands, then one hand, and finally, we practice tipping with either hand. The two-hand tip is almost identical to the boost for a spike in volley ball. In off seasons we like to have our players play volley ball. Players learn to let the ball rest momentarily in the fingers for control and feel, then by flicking the wrist, the ball is forced upward, the middle and index fingers touching the ball last. As the descending ball comes into the hand, on the one-hand tip-in, the fingers are spread and held back, forming a cup for the ball; the little finger and thumb serve as a bracket for supporting the ball; the palm is held upward, almost parallel to the floor.

We try to tip the ball against the backboard at least eighteen inches, or two feet above the basket, so that the ball will drop down into the basket. We think our percentages are better if we tip the ball high on the board; the majority of tip-ins are not high enough. Then, too, if the ball

(Continued on page 41)

What's Lacking in Our Line Play

By Ellison Edwin Ketchum

Line Coach, University of Denver

NOW, just a minute! Don't tell me that all you lack is adequate material, or that you have no size and that such as you have is slow to the point of being impossible. Could it be that we as coaches know too much to be fundamental in our teaching?

What wouldn't we all give for a bevy of mean, big, fast, smart boys whose enthusiasm for the pigskin sport knows no bounds? Such a group would doubtless make a great coach out of you or any other fortunate, yet misguided individual.

But take the average group of linemen, your group and mine, for instance. They stack up about like this: Ends, the big ones are slow; the small ones are not fast except by comparison; the ones that are good pass grabbers are pitifully weak defensively and do not block well; tackles, the big ones (if 200 pounds is big) lack ranginess as well as speed; the 185 pounders are leggy and would make better ends; guards, the 200-pound boys are too slow to pull; the "watch-charm" variety can't grab enough turf to hang in there on the defense (like chips on the ocean waves); centers, if rugged offensively are usually too slow for pass defense; we generally end

up by converting a nondescript back into an equally ineffective center because he can back up the line.

Perhaps your material is better than the aforementioned. Anyhow it would seem logical that there are many coaches in high school and college who find themselves in a position where it is necessary to develop, convert, adjust, compensate, or in some other way try to offset superior material on the part of their opposition.

Most of us, whatever our situation, demonstrate an incapable attitude at the outset. The material, we say, is terrible. We said the same thing last year and the year before. In fact, I just described it as such. How can it be that we are always riddled by a June graduation of that "lousy" previous September material? Not that it's anything to worry over, the public will never get wise. Furthermore, we as a group will never hesitate to laud the ability of this year's graduates who as ugly ducklings last September developed into swans of perfection in football techniques, under our careful and sagacious guidance.

Now as to technique of teaching line play, there are three things to be considered. First: How well you teach; second

the latitude of your teaching; and third, adjusting methods to material at hand. Of the three it is hard to say which is most important as they are inseparable parts. Therefore, you should not fail to recognize the importance of each.

I have always said that the importance of technique is so evident to the average coach that he fails to develop the thinking of the player. This inadvertent satisfaction with his own gross knowledge interferes with a careful, painstaking, and simplified approach. Not only careful and organized teaching, but simplified technique is necessary to bring the player up to a point, where he is mentally equipped to play a football game.

A good example of gross and consequently poor coaching is seen in the end coach who tries to teach all he knows about end play to a sophomore in a single season or perhaps a single session. Suppose we take one single phase of end play, *shifting to gain offensive advantage*, and see how involved it can become. The coach tells his end, "You must shift wide to flank a tackle, or shift close to have inside blocking advantage, as the case demands. "You may, however," he goes on, "want to be

inside of a tackle and use a nuisance block to flank him just for a change of pace." "Of course," he continues, "there will be times when you will want to shift far wide, just to make him worry, especially when you don't have to block him on that particular play." "Just for fun," he adds slyly, "you might shift outside and right back inside, it keeps the tackle jumpy. If you can shift wide and suck him out of defensive position, we may be able to run inside of him," etc., etc.

Well, by this time the end is the one that is confused and he'll probably go right into the game and never shift at all. He will, therefore, neither gain advantage nor raise the element of doubt in the mind of the opposing tackle. It seems less confusing to boil it down to fundamental reasoning, so why not give the ends this simple rule: You must shift to a position of advantage or to a position of nuisance. In other words, get where you want to be, and always move, even if it is out and back. From that point on, it is up to the end in his shifting to figure out means of effecting the advantage that he, as a player, needs.

Consider the many phases of offensive and defensive line play which you will be trying to teach this fall. These phases, of course, will be multiplied by seven, for there are variances in every line position and there will be several men out for each of the seven positions; this increases the problem in a proportional manner. Couple the immensity of your teaching task with the human factor, that is, the inability to learn and the readiness with which some linemen forget and your job isn't getting any easier. You also may have a few uncontrollable distractions, normal and otherwise, which interfere with teaching effectiveness. Normal distractions would be such as spectator annoyance, passing overhead airplanes, the punting of a loose ball by some tackle (all linemen like to punt), while the others watch the flight of the ball. Otherwise than normal distractions would be such as the marching of the band down the middle of the field, the whimsical drilling of the girls' pep club for half time maneuvering, etc. Whatever your problem, if you were fully aware of its immensity, you would not experience a feeling of guilt when you pocket your next off-season pay check.

When you undertake such a Herculean task as teaching line play, you must, if you are to teach effectively, use simple methods, be reasonable, and demand, above all else, plenty of initiative on the part of the players. After all, your athletes can think as well as you can, and it is fatal to think for them.

Therefore, as a teaching maxim, remember to place yourself on the experience level with your boys and think *with* them, not *for* them, as you all progress together. It is most wise to be elementary and conversely, foolish to be gross.

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Why Not Devise New Methods and New Games

A Basketball Meet

By Mail

By Max B. Cook

Junior High School, Pitcairn, Pennsylvania

WHAT is so fascinating as shooting baskets? This is usually the activity in which boys are most interested, from the first moment they set foot on a basketball floor until they leave. During the past seven years, I have had opportunity to watch junior high school boys try their skill at this sport. What makes these boys spend so much time practicing to achieve this skill?

I have coached the Pitcairn Junior High School basketball team for the past four years. Here at Pitcairn, the number of candidates for the team is greater than the coaches are able to handle, so we allow only the eighth and ninth grade students to be eligible. We carry about twenty candidates at mid-season, about ten of whom are eighth grade students. Five of those in the eighth grade seldom see action during the year, but still they keep plugging away, night after night. It would be unfair to cut these boys from the squad because the purpose of our junior high school team is to build material and teach fundamentals for the varsity team. I am confronted with the problem of how to take care of such prospective seventh grade players as I may have.

The most important fundamental of the game is to shoot so that a score will be made. In the future, I plan to teach this fundamental early, in a competitive manner. Here is my suggestion as to how this may be done in such a manner that the boys will show an extremely great amount of interest in it.

The contest in which my seventh grade students are going to compete is known as a Basketball Shooting Meet by Mail. In this type of meet the main idea is to score baskets from the different positions on the floor. Each team consists of ten candidates, and each team conducts the meet on their own floor. Each contestant takes five shots from designated positions on the floor. The idea is to make as many of these shots as possible. From the various positions each contestant attempts ten shots. Fifteen free throws are taken from the free-throw line. When a contestant has completed his round, he will have attempted seven hundred and fifty shots.

The score for each player is found by the percentage method, or by dividing the total number of shots made by the total number attempted. For example, if a contestant were to make fifty shots out of

WHEN these articles were sent to the editor's desk, there were no ideas in the minds of the writers that the suggestions might fill war-time needs. But why not have more meets by mail, when transportation difficulties arise? Why not devise new games to keep 'em playing?

seventy-five, his percentage would be .666. The team score would be the total of all contestants' successful shots divided by the number attempted. Each team exchanges their individual scores and team score by mail.

An accepted score sheet shows both the individual score and the team score. When a challenge is issued, two score sheets and a diagram of the position of the shots on the floor are sent to the opponents. Each team keeps one score sheet for their final results, the other score sheet is mailed to the opponent. All results should be mailed immediately after the meet is completed.

This method of shooting practice, or this type of basketball meet, will develop a keen interest in shooting baskets. It will satisfy those boys who have not the opportunity to play the real game with the team. Let's try it. Pitcairn is willing.

Field Tennis

By Harold Jay

THERE comes a time in the daily routine of nearly every coach and playground director when the stand-by games, such as basketball, football and the like simply will not suffice. Sometimes a shortage of equipment, some-

times a lack of players, or perhaps simply the non-desire to participate in the before-mentioned sports, will bring a coach up to a blind alley. Obviously then it would be wise to have on hand a game new to the players, affording a chance for team play, yet simple and needing a minimum of equipment. Such a game is Field Tennis.

Field Tennis is played on a level, smooth court—both indoors and outdoors—fifty-two yards long by twenty-six yards wide. The court is divided into two parts or half-courts by a net, the top strand of which is 3 feet, 4 inches from the ground. The lines of the playing field may be laid out with lime if available, otherwise a few blocks of wood at the corners will do very well.

At each end of the court, and exactly midway between the side lines, mark a rectangle 5 feet long by 3 feet wide. This is the server's box.

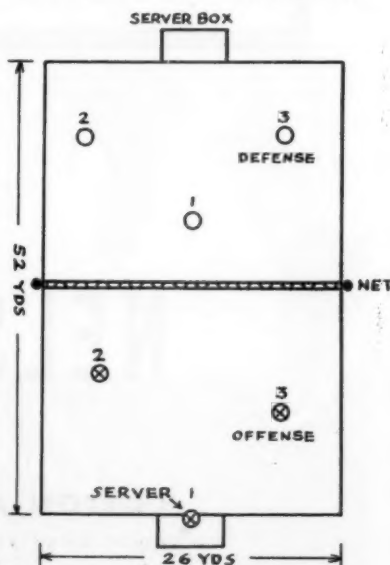
Three players make a side, although substitutions may be made. A formal match game consists of four quarters of twelve minutes each, with one minute between quarters and ten minutes at half time. A substitute shall not report to the umpire until after a point has been scored and the ball is out of play. Two time-outs in each quarter is allotted to each team. They are for one minute duration.

Equipment Needed

1. Playing field—52 yards by 26 yards.
2. One net or nets long enough to reach across the court. Two volleyball nets fastened together are very good.
3. Some tennis balls.
4. An ordinary work glove for each player.

Playing Rules

1. Each team has a player who serves the ball by taking position in the server's box and throwing the ball across the net into the defending team's territory.
2. A serve cannot be caught until it hits the ground and bounds into the air. As soon as it strikes the ground it is in play and can be hurled back across the net. After a ball is served, all other throws may be caught in the air or on the first bounce.
3. After receiving a ball, the player catching it may take one step or hop before throwing. In other words, he must return the ball from a point not more than one step from the place where he caught it. Not more than five seconds may elapse between catching the ball and returning it.
4. A point is scored: (a) When a ball is caught on second bounce; (b) When it is missed or fumbled; (c) When a return



strikes the net; (d) When the ball lands outside the baselines.

5. In the return, the ball may be thrown as hard or as soft as is desired. Oftentimes a soft drop throw just over the net will catch the opponents napping.

6. After the server throws the ball, he may come out of the box and take up any position he wishes.

7. The team scoring the most points during the match wins.

8. After a point is scored, the team making the point continues to serve.

Hints on Playing

Rub resin into the work gloves. They will hold the ball better.

When throwing the ball, vary the delivery, just as a ball pitcher does. Throwing curves with the tennis ball frequently makes it bound at odd angles when it hits the ground, causing the defense to fumble.

Another good shot is made directly underhand, giving back spin to the ball. When not thrown too hard, the ball will bound very little and is very hard to judge.

Fist Ball

By Irvin L. Peterson

Coach, Arlington, Nebraska, High School

Rules and Regulations: The team is made up of six players on a side consisting of right and left forward, forward, right and left guard and center.

Ball: An inflated volleyball is used.

Playing Court: Different size courts may be used; size 60-70 feet long and 40-50 feet wide is suitable; goals are placed at each end, measuring 6 feet 6 inches high and 15 feet wide; nets are suitable or end of the gymnasium may be used for the goal.

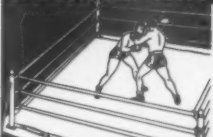
Playing Time: Five periods of six minutes each; substitutions may be made each period with no time-out's except five minutes between halves.

Penalties: The fouls are few, kicking the ball, lifting the ball off of the floor, catching the ball. Anyone of the players of opposing team shoots a free shot. Team on defense can have four men protecting the goal. The ball should be placed about 10 feet in front of the defense. Free shot counts one point.

Game: The referee begins the game by placing the ball in the center of the floor with the center on each side, and blows the whistle. The ball is brought back to the

(Continued on page 41)

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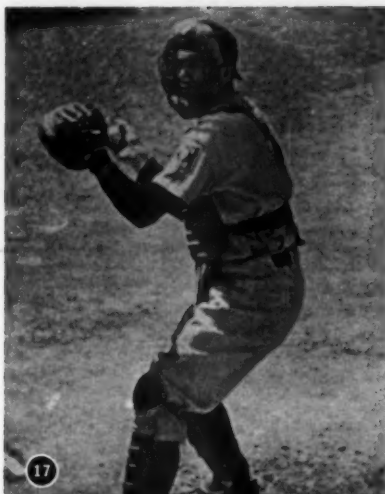
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Denver University Stadium, Denver, Colorado



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Illustration 19. Here the catcher is coming forward with his right hand to make the throw. You will notice that it is a snap over-hand throw. His right elbow is well out from the body.

Illustration 20. Here the ball is leaving the catcher's hand and he is following through with his body.

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For this series of pictures the *ATHLETIC JOURNAL* is indebted to Lew Fonseca of the American League Film Bureau, 310 South Michigan Avenue, Chicago. The pictures are taken from the new American League film, "The Ninth Inning." This 35-mm. film is available to schools, churches and organizations which have sound projectors. The only obligation is express charges both ways. The prints were secured through the courtesy of the Chicago Film Laboratories.



Problems of Administering High School Athletics

By Walter J. Hunting

Athletic Director and Football Coach, Denfeld High School, Duluth, Minnesota

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TRAINERS JOURNAL

SECTION

OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

MAY, 1942

No. 9

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Training and Conditioning
Practices of College and
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Coaches and Trainers
Dr. Wilbur Bohm

The Care of the Feet
Jack Heppinstall

Bernie H. Macrae, Football Coach
Charles F. Stralby, Trainer
Louisiana State University

Why Not Devise New Methods and New Games

A Basketball Meet

By Mail

By Max B. Cook

Junior High School, Pitcairn, Pennsylvania

WHAT is so fascinating as shooting baskets? This is usually the activity in which boys are most interested, from the first moment they set foot on a basketball floor until they leave. During the past seven years, I have had opportunity to watch junior high school boys try their skill at this sport. What makes these boys spend so much time practicing to achieve this skill?

I have coached the Pitcairn Junior High School basketball team for the past four years. Here at Pitcairn, the number of candidates for the team is greater than the coaches are able to handle, so we allow only the eighth and ninth grade students to be eligible. We carry about twenty candidates at mid-season, about ten of whom are eighth grade students. Five of those in the eighth grade seldom see action during the year, but still they keep plugging away, night after night. It would be unfair to cut these boys from the squad because the purpose of our junior high school team is to build material and teach fundamentals for the varsity team. I am confronted with the problem of how to take care of such prospective seventh grade players as I may have.

The most important fundamental of the game is to shoot so that a score will be made. In the future, I plan to teach this fundamental early, in a competitive manner. Here is my suggestion as to how this may be done in such a manner that the boys will show an extremely great amount of interest in it.

The contest in which my seventh grade students are going to compete is known as a Basketball Shooting Meet by Mail. In this type of meet the main idea is to score baskets from the different positions on the floor. Each team consists of ten candidates, and each team conducts the meet on their own floor. Each contestant takes five shots from designated positions on the floor. The idea is to make as many of these shots as possible. From the various positions each contestant attempts ten shots. Fifteen free throws are taken from the free-throw line. When a contestant has completed his round, he will have attempted seven hundred and fifty shots.

The score for each player is found by the percentage method, or by dividing the total number of shots made by the total number attempted. For example, if a contestant were to make fifty shots out of

WHEN these articles were sent to the editor's desk, there were no ideas in the minds of the writers that the suggestions might fill war-time needs. But why not have more meets by mail, when transportation difficulties arise? Why not devise new games to keep 'em playing?

seventy-five, his percentage would be .666. The team score would be the total of all contestants' successful shots divided by the number attempted. Each team exchanges their individual scores and team score by mail.

An accepted score sheet shows both the individual score and the team score. When a challenge is issued, two score sheets and a diagram of the position of the shots on the floor are sent to the opponents. Each team keeps one score sheet for their final results, the other score sheet is mailed to the opponent. All results should be mailed immediately after the meet is completed.

This method of shooting practice, or this type of basketball meet, will develop a keen interest in shooting baskets. It will satisfy those boys who have not the opportunity to play the real game with the team. Let's try it. Pitcairn is willing.

Field Tennis

By Harold Jay

THERE comes a time in the daily routine of nearly every coach and playground director when the stand-by games, such as basketball, football and the like simply will not suffice. Sometimes a shortage of equipment, some-

times a lack of players, or perhaps simply the non-desire to participate in the before-mentioned sports, will bring a coach up to a blind alley. Obviously then it would be wise to have on hand a game new to the players, affording a chance for team play, yet simple and needing a minimum of equipment. Such a game is Field Tennis.

Field Tennis is played on a level, smooth court—both indoors and outdoors—fifty-two yards long by twenty-six yards wide. The court is divided into two parts or half-courts by a net, the top strand of which is 3 feet, 4 inches from the ground. The lines of the playing field may be laid out with lime if available, otherwise a few blocks of wood at the corners will do very well.

At each end of the court, and exactly midway between the side lines, mark a rectangle 5 feet long by 3 feet wide. This is the server's box.

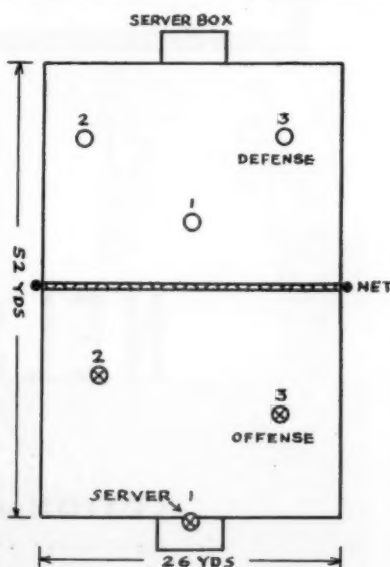
Three players make a side, although substitutions may be made. A formal match game consists of four quarters of twelve minutes each, with one minute between quarters and ten minutes at half time. A substitute shall not report to the umpire until after a point has been scored and the ball is out of play. Two time-outs in each quarter is allotted to each team. They are for one minute duration.

Equipment Needed

1. Playing field—52 yards by 26 yards.
2. One net or nets long enough to reach across the court. Two volleyball nets fastened together are very good.
3. Some tennis balls.
4. An ordinary work glove for each player.

Playing Rules

1. Each team has a player who serves the ball by taking position in the server's box and throwing the ball across the net into the defending team's territory.
2. A serve cannot be caught until it hits the ground and bounds into the air. As soon as it strikes the ground it is in play and can be hurled back across the net. After a ball is served, all other throws may be caught in the air or on the first bounce.
3. After receiving a ball, the player catching it may take one step or hop before throwing. In other words, he must return the ball from a point not more than one step from the place where he caught it. Not more than five seconds may elapse between catching the ball and returning it.
4. A point is scored: (a) When a ball is caught on second bounce; (b) When it is missed or fumbled; (c) When a return



strikes the net; (d) When the ball lands outside the baselines.

5. In the return, the ball may be thrown as hard or as soft as is desired. Oftentimes a soft drop throw just over the net will catch the opponents napping.

6. After the server throws the ball, he may come out of the box and take up any position he wishes.

7. The team scoring the most points during the match wins.

8. After a point is scored, the team making the point continues to serve.

Hints on Playing

Rub resin into the work gloves. They will hold the ball better.

When throwing the ball, vary the delivery, just as a ball pitcher does. Throwing curves with the tennis ball frequently makes it bound at odd angles when it hits the ground, causing the defense to fumble.

Another good shot is made directly underhand, giving back spin to the ball. When not thrown too hard, the ball will bound very little and is very hard to judge.

Fist Ball

By Irvin L. Peterson

Coach, Arlington, Nebraska, High School

Rules and Regulations: The team is made up of six players on a side consisting of right and left forward, forward, right and left guard and center.

Ball: An inflated volleyball is used.

Playing Court: Different size courts may be used; size 60-70 feet long and 40-50 feet wide is suitable; goals are placed at each end, measuring 6 feet 6 inches high and 15 feet wide; nets are suitable or end of the gymnasium may be used for the goal.

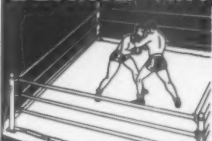
Playing Time: Five periods of six minutes each; substitutions may be made each period with no time-out's except five minutes between halves.

Penalties: The fouls are few, kicking the ball, lifting the ball off of the floor, catching the ball. Anyone of the players of opposing team shoots a free shot. Team on defense can have four men protecting the goal. The ball should be placed about 10 feet in front of the defense. Free shot counts one point.

Game: The referee begins the game by placing the ball in the center of the floor with the center on each side, and blows the whistle. The ball is brought back to the

(Continued on page 41)

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SPORTS

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Baseball Illustrated

Catching

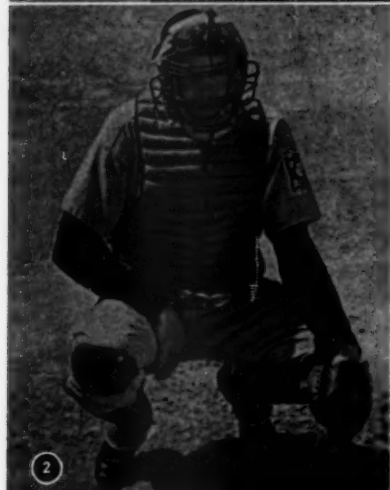
Illustrations of Bill Dickey

ONE of the most important players on a baseball team, outside of the pitcher, is the catcher. Every team that has won an American or National League Championship has always had a good catcher. Some of the outstanding catchers on recent pennant winners were as follows: "Mickey" Cochrane of the Philadelphia Athletics and Detroit Tigers, Bill Dickey of the New York Yankees, Leo Hartnett of the Chicago Cubs and Ernie Lombardi of the Cincinnati Reds.

It is essential that a catcher have a good throwing arm so coaches should not be hesitant to take a man from the outfield or infield, who can throw, and make a catcher out of him. He may use a snap throw or full-arm throw, but he should be sure that he can get the ball away quickly and with the least possible loss of time. When throwing, the catcher should take a step forward with his left foot and make his throw. After the catcher learns this, he should be able to get himself into throwing position just before the ball reaches him. The catcher must, also, learn to get in front of the ball by shifting the body. He should never stand still and depend on his reach to catch the ball.

During practice the catcher should throw the same distance that he must throw in the game. It is important that free-arm throwers do not get in the habit of trying to throw the ball too fast; that they get the habit of starting the throw back far enough so that they are not pushing the ball out in front of them instead of throwing it.

Illustration 1. The catcher has taken his position behind the batter and is ready to give the sign to the pitcher. You will notice the catcher is in a crouch position and looking directly at the pitcher. He must be sure that the pitcher is getting the sign. It is important that the catcher be as near to the batter as he can safely be. If he is close to the batter, the pitcher has a better target at which to throw, and in this close-up position, the catcher is nearer the bases to which he must throw. However, when the catcher thinks he is going to throw to third base, he should get back far enough so that the batter will not be in his way when he throws. The step of the left foot is not to the front, but to the side and to the rear. This is not necessary in throwing to third base with left-hand hitters, but must be done in throwing to first. Notice the catcher's right foot is slightly forward.





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Illustration 2. In this picture, the catcher is in a position to give the pitcher the sign of pitch he wishes thrown. You will notice that the catcher has his right hand well covered so the base line coaches cannot see the sign. The signs must be arranged so it is impossible for a base-runner to detect what type of pitch is going to be thrown.

Illustration 3. The catcher has given the sign to the pitcher and is about to beat the glove with his right hand. This is a common habit of a catcher.

Illustration 4. The catcher is beating the glove with his right hand. This habit seems to instill pep and also helps to make the pocket in the glove.

Illustration 5. The catcher is still in his crouch position and is now clearing the pocket in his glove after beating it with his right hand.

Illustration 6 shows the catcher in crouch position and holding his glove for target.

Illustration 7. The catcher is holding only his glove out to show the pitcher the exact target he wants him to throw to.

Illustration 8. In this picture the catcher is coming up from his crouch position and getting in position to receive the throw from the pitcher.

Illustration 9. The catcher has come up from his crouch position and is preparing to take his stance to receive the pitch.

Illustration 10. Here the catcher has taken his upright stance. His hips and back are bent and he has the glove out for the pitcher's target.

Illustration 11. The catcher is in position to receive the pitch. You will notice there is quite a spread between his two feet and that the toe of his left foot is in line with the heel of his right foot. There is a bend in his knees, hips and back.

Illustration 12 shows the catcher receiving the pitch. Notice the fingers on the right hand are straight down. The fingers should always be straight up or straight down. This is the natural way to catch the ball and it also protects the fingers from being injured.

Illustration 13. The catcher has received the pitch securely. The ball is in the pocket of the glove hand, and is covered with the fingers of his throwing hand. The catcher must always remain relaxed, so that the weight of the ball will cause the hands to give.

Illustration 14. In this picture, the catcher has received the pitch and is getting ready to return the throw.

Illustration 15. The catcher is starting to raise his hands with the ball and starting to pivot in order to return the throw.

Illustration 16. Here the catcher has made a half turn and has started forward with his left foot in order to return the throw. His two hands have been brought up a little higher than shown in the preceding illustration.

Illustration 17. The catcher has com-



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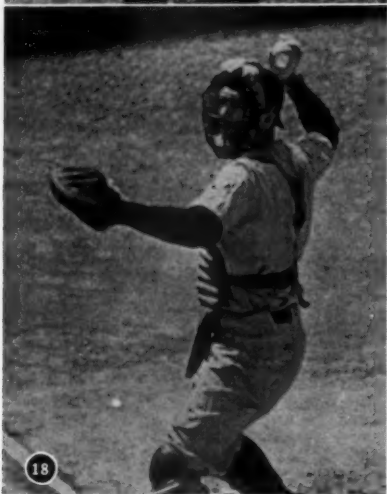
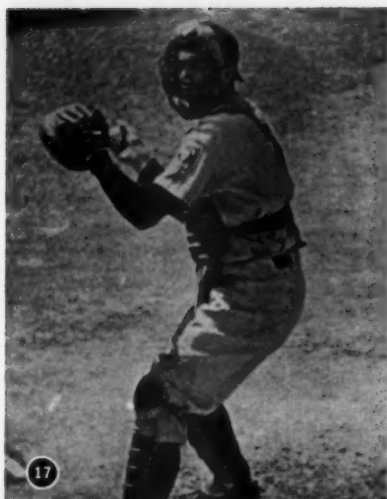
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THE TRAINERS JOURNAL SECTION

Official Publication National Athletic Trainers Association

May, 1942

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Officers National Athletic Trainers Association
For 1941-1942

President, Lloyd Stein, University of Minnesota
1st Vice-President, John Kelly, New York University
2nd Vice-President, Henry Schmidt, Santa Clara University
3rd Vice-President, Wilbur Bohm, Washington State College
Executive Secretary and Editor of Trainers Journal, Bill Frey
Office of Publication, Iowa City, Iowa

Planning For Next Year

TO complete our first year of publication, we have one more issue, which will be devoted principally to the announcement of our new officers and reports of the two division meetings held at the Drake and Penn Relays.

Many of the plans that were inaugurated with our first issue have been carried out. Wherever the High School Student Trainer Plan was adopted, much enthusiasm was shown. With our conference chairmen ready to explain the working details of this plan and with the many coaches who have been getting information on it this year, ready to enroll their boys next year, we expect a big increase in this department.

As we look ahead to next year, we are faced with unusual conditions. We will need to have our members signify their intention, during this month, of subscribing for the Trainers Journal for next year. We will need to know approximately what new members we may count on. Conference chairmen should send in the reports of their spring meetings at an early date.

Athletic Trainers in the Service

ALREADY many of our members have entered the service. Roland Logan of West Point is now stationed at Annapolis, assisting with the conditioning of the men to be assigned as instructors to the four Naval bases at St. Marys College, the universities of Iowa, Georgia and North Carolina; Lloyd Stein, 1941-42 President of the National Athletic Trainers Association is to be assigned to one of these bases.

There are several others in the various branches of the service. When we learn of their definite assignments, announcement will be made in these columns. Many of our members are heading up the Red Cross first aid groups in their communities. We are ably fitted for this work. Let us volunteer our services.

UNDER THE SHOWERS



CHAIRMAN of the North Carolina State Intercollegiate Conference, Charles "Block" Smith is a very busy man from September through May each year at Guilford College located in the beautiful mountains of North Carolina.

Besides being head trainer, "Block" is the football coach, basketball coach, director of intramurals and athletic director. In appointing Mr. Smith to the new position representing the National Athletic Trainers Association, the officers of the association feel that they have picked a man who is not afraid of work. Block has worked up a great reputation in the deep South by his famous sore arm treatment for baseball arms and has promised to write an article for the Trainers Journal on that subject. Trainers of the North Carolina State Conference are urged to contact Mr. Smith in reference to becoming members of the Trainers Association.



HEAD trainer at George Washington University, George Lentz trained the New York-Pennsylvania Baseball League for ten years before going to Catholic University where he trained their teams for seven years. He is starting his fifth year as head trainer in his present position.



IN 1933 when Fritz Crisler became football coach at Princeton University, Edward Zanfrini took up the duties as trainer, becoming head trainer in 1938. Previous to going to Princeton Mr. Zanfrini had been a trainer of professional boxers, including Christopher "Bat" Batolino, former world's featherweight champion.

During the summer, he spends his time in orthopedic clinics, gaining knowledge which is of great benefit in his work as trainer. His pet hobby is making protective braces and pads for injuries.



AT Abraham Lincoln High School in Brooklyn, Irving Cohen, fencing coach, is also head trainer. With the emphasis that is now being put upon training, conditioning, and care and prevention of injuries, the time will

come when all our high schools will have an athletic trainer on their staffs.

Care of the Feet

By Jack Heppinstall

Athletic Trainer, Michigan State College

THE old advice given by trainers to athletes to take care of their teeth, stomach and feet still holds true, because if your teeth are neglected your stomach will soon get out of order and get you down, and the average athlete will not get far in any type of athletics with poor feet. The only ones who can get along with poor feet are polo players, and they have horses to ride on.

The first object is to get the feet tough like the hands, without calluses or soft spots. To get this condition, paint the feet every day during early training with tannic acid compound before and after each practice, and check between the toes to see that they are dry, then when all the foot is dry after massaging, dust with a good foot powder.

The nails should be trimmed properly each week, that is, cut straight across and not into the corners, which has tendency to start ingrowing nails from the pressure of the shoes. Finger nails can be cut or filed into the corners, because normally there is not any pressure on them.

Socks and shoes should be the right size, not too short to cause pinching, nor too long to be sloppy, and if possible, heavy shoes should be worn for practice and light shoes for games. These shoes should be well broken in before the first game. I have found through experience that heavy white cotton socks are better for the feet than wool socks. Wool socks keep the feet too warm, which causes perspiring and then makes the feet soft. Try wearing woolen gloves every day and see how soft your hands will become. Socks should be changed every day or at least every other

High School Trainers Lesson No. 9

day.

Because of the great amount of pivoting, quick starting and stopping on hard wooden floors, basketball players should wear two pairs of socks at a time. They form a better cushion for the feet and, at the same time, act as sliding pads on baseball players, helping to prevent blisters on the soles of the feet.

Some colleges are using cotton socks next to the feet and woolen socks over them for their basketball players. I have tried that, but somehow the two pairs of cotton socks seem to work better.

Rubber foot trays containing a 2 per cent hypo solution, placed in front of the shower room door so that all the athletes may step into the solution before and after each shower, painting their feet with tannic acid compound and the use of cotton socks certainly have cut down the foot troubles of our athletes.

Weak arches cause much trouble to athletes. The chief reason for that is that the present-day athlete does not get enough walking. In other words, "too many automobile legs."

The difference in the height of the heels of ordinary shoes and athletic shoes causes a great deal of trouble with the arches at the start of the season or in early training, athletic shoes being lower in the heel. To offset this I tape a three-eighths inch sponge rubber heel pad into the heel of the shoe. In a week or ten days the pad has been crushed down so flat that its value is almost nothing, but in the meantime the arch has become used to the change and usually is set for the rest of the playing season.

For ordinary weak arches, I tape with inch and a half tape an ordinary figure

eight around the ankle joint, then extend circular pieces around the longitudinal arch, each overlapping the preceding one, the full length of the arch to the big toe joint. This taping should be applied each day before practice, until the arch is built up.

For the transverse arch I build up the arch with a daily massage of the foot and sponge rubber pads. The massage should have a great deal of stretching and toe bending to help strengthen the arch. The pads are one-fourth sponge rubber cut oval shaped, one and one-half inches by one inch, with the edges trimmed down. The pad on the back side or heel side of the fallen joint should be taped with one strip of tape that overlaps on the top of the arch, so that the tape and pad may be moved easily. The patient can tell when the pad is in the proper place; at first these pads may have to be moved forward or backward or sideways three or four times, before they are in the proper place. They should be applied every day after practice or game and kept on until the arch is built up.

One of the best exercises to strengthen and build up weak arches and feet is to stand erect with hands on hips, with both feet parallel to each other about two inches apart, and rock both feet at the same time from toe to heel, holding the rock momentarily on heels and toes. These exercises should be started with about six rocks a day, then increased to at least twelve rocks twice a day. This exercise is also very good for track men or for any athlete who does much running. It has a tendency to prevent shin splints.



Taping for Weak Longitudinal Arch



Training and Conditioning Practices of College and University Basketball Coaches and Trainers

By Wilbur Bohm, D.O., BS., M.E.D.
Athletic Trainer, State College of Washington

THIS study was made by sending questionnaires to college and university coaches and trainers of basketball teams in the United States and Canada. The investigation was begun during the championship tournament of the National Collegiate Athletic Association, "The World's Series of Basketball," which was held March 21, 22, and 29, 1941, in the Municipal Auditorium, Kansas City, Missouri, and has just been completed. An excellent response was received. The replies to the various questions in each questionnaire as a whole, indicated that each questionnaire was completely answered with careful thought.

Table I shows the extent to which meat and eggs were recommended in the training diet as compiled from the questionnaires returned by the college and university basketball coaches and trainers.

The significant value of the chart is really brought forward when divided into two separate groups. Placing 0-1-2 into one column, as those not recommended, or negative, and columns 3-4-5 into another column, as those recommended, or positive, gives some decidedly comprehensive results.

From a thorough study of the results it will be noticed that beef, soft boiled eggs, poached and shirred eggs are more highly recommended than the other meats and eggs. They are ranked in the order given above, beef being distinctly favored.

Tables II and III, as follows, record the extent to which milk is recommended as a part of the training diet, and the quality preferred is given consideration.

Using the same method of grouping and scales of recording as in Table I, we find that ordinary whole milk is recommended most highly to be used as part of the regular training diet. Pasteurized milk is insisted upon by one coach.¹ This is especially interesting since it has not been so many years ago that many coaches and trainers were suspicious as to the value of milk in the diet of the athlete. The following remarks by one of the coaches prove interesting. "Milk is a heavy food and should be regarded as such. This would dissolve myths of short wind, etc."²

Table IV tabulates the extent to which

¹ Henderson, Bill, Basketball Coach, Baylor University.
² Carlson, H. G., Basketball Coach, University of Pittsburgh.

milk is included in the every-day diet of the college and university basketball players in training. Inspection of the chart shows that it is a very important food to

Scale for Reading Tables I-VII.

0—Never recommended. 1—Very seldom recommended. 2—Infrequently recommended. 3—Fairly regularly recommended. 4—Frequently recommended. 5—Habitually recommended.

TABLE I
MEAT AND EGGS RECOMMENDED OR REJECTED IN TRAINING DIET

	0	1	2	3	4	5
Beef		2	11	35	20	8
Cold Meat	7	20	21	6	5	0
Lamb	1	13	27	12	11	1
Pork	20	22	12	5	1	0
Mutton	9	16	12	6	4	0
Ham	7	21	21	12	1	1
Bacon	3	11	22	28	5	3
Veal	5	14	27	10	4	0
Eggs, Soft Boiled	1	2	11	33	9	6
Eggs, Hard Boiled	20	12	4	4	0	0
Eggs, Scrambled	1	11	20	21	4	2
Eggs, Poached	1	4	15	30	6	8
Eggs, Fried	15	16	8	4	1	0
Eggs, Shirred	8	8	8	9	2	0
Eggs, Curried	9	10	6	7	0	0

TABLE II
EXTENT TO WHICH MILK IS RECOMMENDED

	0	1	2	3	4	5
Milk	0	0	0	22	23	27

TABLE III
QUALITY OF MILK RECOMMENDED

	0	1	2	3	4	5
Ordinary whole milk	2	2	1	18	13	26
High in fat content	2	2	2	4	5	3
Skimmed	6	2	3	3	0	1
Buttermilk	2	3	12	4	4	1

TABLE IV

	Time Preferred	Not Preferred
Drink milk every day at every meal	21	20
Drink milk at evening meal	7	15
Drink milk at morning and evening meals	29	9
Drink milk at morning meal only	7	12
Drink milk just before a contest	0	50
Drink milk last two meals before contest	6	33
Drink milk in week before a contest	27	9

TABLE V
THE USE OF CHEESE AND BUTTER IN TRAINING DIET

	0	1	2	3	4	5
Cheese, any kind	5	18	11	7	2	4
Mild Yellow Cheese	5	13	14	9	3	1
Limburger Cheese	7	15	1	2	0	0
Cottage Cheese	1	10	16	17	7	3
Strong Cheese	7	11	3	3	1	1
Butter	0	2	2	12	11	41

TABLE VI
THE TIME CHEESE IS USED IN DIET

	Time Preferred	Not Preferred
Eat cheese every meal every day.....	0	23
Eat cheese at morning and evening meals.....	2	19
Eat cheese at evening meal only.....	34	12
Eat cheese at morning meal only.....	2	19
Eat cheese just before a contest.....	0	37
Eat cheese meal before a contest.....	1	31
Eat cheese last two meals before a contest.....	2	30
Eat cheese the week before a contest.....	23	10

TABLE VII
THE EXTENT OF BUTTER USED IN TRAINING DIET

0	1	2	3	4	5
0	1	2	13	11	43

Scale for Reading Responses in Table VIII Is as Follows:

- A—Especially preferred on the last meal before a contest.
B—Especially preferred on next to last meal before a contest.
C—Might be eaten in moderation at any time.
D—Should not be eaten the meal before a contest.
E—Should not be eaten on the day of a contest.
F—Should not be eaten for two days preceding a contest.

TABLE VIII

BREADS

	A	B	C	D	E	F
Biscuits	1	1	4	15	15	14
Toast	46	11	15	0	1	0
Crackers	6	7	22	8	8	3
Fresh loaf bread.....	2	2	8	16	14	12

CEREALS

	A	B	C	D	E	F
Corn Flakes	2	5	41	13	3	2
Post Toasties	3	4	40	12	4	1
Cream of Wheat.....	5	5	40	13	3	0
Grape Nuts	2	5	33	13	9	0
Rice Flakes	2	4	39	14	3	2
Wheat Krispies	2	6	39	13	3	2
Wheatena	3	7	34	13	5	1
Shredded Wheat	2	5	34	14	6	1
Oat Meal	6	9	39	13	2	0
Puffed Wheat	2	4	38	12	4	0
Puffed Rice	2	4	39	11	7	1
Ralston's Food	3	4	37	11	5	2

DESSERTS

	A	B	C	D	E	F
Pudding	1	6	24	9	10	6
Crackers (sweet)	2	4	19	8	4	7
Cake	0	0	10	16	16	12
Pie	0	0	3	15	18	15
Jello	19	11	24	5	0	1
Gelatin	17	6	28	4	0	1
Ice Cream	10	18	22	7	3	2

BEVERAGES

	A	B	C	D	E	F
Coffee	2	12	19	12	7	3
Tea	41	8	16	3	0	1
Soda water	1	1	5	9	11	25
Beer	0	0	1	7	6	43
Liquors	0	0	0	6	5	41

MEATS AND DAIRY PRODUCTS

	A	B	C	D	E	F
Bacon	1	5	22	15	7	2
Cheese	0	1	20	17	10	10
Nuts	0	0	5	15	15	17
Peanuts	0	0	4	15	13	30
Meat soup	7	8	25	7	1	5
Ham	0	2	19	19	10	8
Pork	0	0	10	17	11	16

be included in the diet; however it is just as important that the amount and time be watched. One coach stated: "May have milk as often as wanted within six hours of athletic endeavor."³ Another says: "Drinking milk just before a contest is a practice never to be allowed."⁴ Again one trainer has the following comment to make: "Some boys cannot drink milk so I would not force it on them."⁵

Table V presents the extent to which some important dairy products are used as a part of the training diet. Regarding the use of cheese in the training diet of the college and university basketball player, study of Table V reveals that cottage cheese is the most popular kind of cheese with the coaches and trainers. Mild yellow cheese ranks next in order. One of the trainers is decidedly opposed to the use of any kind of cheese.⁶

The time that is considered best for the serving of cheese to the basketball player is brought out in studying Table VI.

Eating cheese at the evening meal only is the meal which is generally considered the best for the serving of cheese according to the findings tabulated in the table. One of the trainers includes the following remarks in his questionnaire, "We eat cheese at noon and night about three or four times a week."⁷ The opinion of the majority is brought out in the following reply of one coach. "Cheese should not be eaten just before, in the meal before, or in the last two meals before a contest."⁸

Table VII shows us that the serving of butter to the basketball player is especially highly recommended.

In studying Table VIII we see the opinions regarding which foods are best in the opinion of the coach or trainer to be eaten just before the contest. Table VIII presents all of the foods necessary for the basketball player to use from day to day in preparation for active competition, and some very distinct trends are noticed. By a great majority, the coaches and trainers favor the moderate use of almost any of the foods that are presented for consideration.

The varying responses of a few are especially noticeable, however, in the remarks that are quoted by some of those who are responsible for the diet of the basketball player.

"Never eat cereals at three meals preceding the contest."⁹

"As to cereals, we eat all of them."¹⁰

"Rice should not be eaten with other starches."¹¹

³ Barry Justin, Basketball Coach, University of Southern California.

⁴ Cogdal, J. T., Basketball Coach, Illinois State Normal University.

⁵ Bakke, Walter, Athletic Trainer, University of Wisconsin.

⁶ Hutsell, Wilbur, Athletic Trainer and Track Coach, Alabama Polytechnic Institute.

⁷ Logan, Roland, Head Trainer, United States Military Academy.

⁸ Means, L. S., Basketball Coach, Beloit College.

⁹ Taylor, Beryl S., Athletic Trainer, Iowa State College.

¹⁰ Rupp, A. F., Basketball Coach, University of Kentucky.

¹¹ Scholze, S. E., Basketball Coach, University of Florida.

"Peanuts, once in a while."¹²

"Biscuits and fresh loaf bread, never."¹³

"We serve the cooked cereals on game day in the A.M."¹⁴

"Cereals, none."¹⁵

"Beer, some in special cases to add weight and strength."¹⁶

"No control over diet is attempted."¹⁷

"Potatoes, mashed."¹⁸

Table IX indicates the degree to which the particular item should be used in the training diet. The scale used is the same as that used in Tables I-VII inclusive.

Table X shows the preferences of the various coaches and trainers regarding the manner in which foods are prepared. The opinions vary, but nearly all are agreed that they do not consider fried foods as being food for the basketball player.

From the above tabulations it may be presumed that the great majority of the university and college basketball coaches and trainers held fried foods in great disfavor.

Some of the supplementary remarks accompanying the returned questionnaires are interesting from the standpoint of diet. One coach gave his diet as follows: "Our Diet: We give 50 per cent high protein diet the first two weeks of training, then cut down to 25 per cent protein. 75 per cent carbohydrates for the remainder of season. Like vitamin pills for early season."¹⁹ Another included the following comment: "All these questions are O.K., but the trainer doesn't live that can supervise the diets of his teams unless he has a training table. We have it for football and the last weeks of crew. Here our chefs, waiters, etc., all co-operate with the trainer. A trainer can handle each boy individually. If he preaches too much as a body you know the answer, 'bunk.' Boys will be boys. A questionnaire of this kind is hard to answer. I believe a trainer should know each one of his athletes. If you have a training table, then the athlete can be supervised. Let common sense be your judge. To be too scientific is 'bunk.' Give them a good meal of baked, boiled, or broiled meats such as steak, lamb, including vegetables, nothing fried, no pork, no highly spiced meats, and always remember even if they have whiskers on their chins, they are always boys as long as they are in athletics. Some will crave the trainer's advice, some will forget it, some few will try to out-fox you. Therefore, know your boys. Personally, I am sure in a game of endurance if an athlete does not eat five hours before a contest he is in bet-

TABLE VIII—Continued

Lamb	17	8	19	6	2	3
Beef	31	17	13	1	0	3
Chicken	11	8	26	6	4	1
Turkey	9	8	23	8	5	1
Duck	4	4	20	9	10	3
Fish	4	5	32	8	10	3
Eggs	28	10	22	0	0	0

FRUITS

	A	B	C	D	E	F
Apples	6	12	32	7	0	1
Oranges	16	16	27	2	0	1
Pears	11	9	31	6	3	2
Strawberries	2	5	19	13	10	3
Bananas	2	4	14	14	10	11
Grapefruit	11	13	31	6	0	0
Tangerines	5	11	27	4	1	2
Apricots	3	5	30	7	3	3
Plums	3	3	24	7	6	5
Orange juice	26	14	25	1	1	0
Tomato juice	16	14	31	2	1	0
Raisins	2	9	29	9	8	2
Prunes	4	9	35	5	5	3
Pineapples	6	10	29	8	3	1
Pineapple juice	11	13	29	4	2	0
Grapes	3	5	29	7	6	4
Dates	3	5	22	8	8	6
Cherries	2	1	25	11	11	7
Peaches	15	7	31	4	4	1

VEGETABLES

	A	B	C	D	E	F
Carrots	12	11	36	5	2	1
Spinach	9	11	33	5	2	1
Cauliflower	1	4	15	17	13	2
Cabbage (boiled)	0	3	11	24	18	8
Turnips	0	3	13	15	16	7
Lima beans	1	7	21	16	14	2
Soy beans	0	2	17	14	11	5
Black-eyed peas	0	2	19	8	9	5
Lettuce	12	18	28	9	2	0
Squash	1	9	24	9	4	2
Irish potatoes	19	13	24	8	1	1
Sweet potatoes	0	9	23	18	5	2
Beets	2	12	32	10	4	0
Celery	6	15	35	4	3	0
Broccoli	3	7	22	9	9	4
Tomatoes	12	11	35	5	3	0
Green peas	13	20	27	5	0	1
Cucumbers	0	2	5	13	19	12
Green peppers	0	2	7	11	19	11
Onions	0	2	8	14	18	10
Asparagus	5	6	33	8	4	4
Red cabbage	0	3	10	13	13	11
Artichokes	0	2	11	14	14	9
Okra	1	2	12	13	13	10
Parsnips	0	2	17	16	14	5
String beans	5	11	38	6	2	1
Egg plant	0	3	22	14	9	6
Corn	1	6	18	19	9	5
Mushrooms	0	3	13	13	10	7
Vegetable soup	11	14	26	7	2	0
Rice	3	8	27	10	9	0

TABLE IX

CEREALS

	0	1	2	3	4	5
Corn Flakes	0	1	1	6	3	1
Post Toasties	0	1	1	6	2	1
Cream of Wheat	0	1	2	6	2	1
Grape Nuts	0	1	3	7	1	0
Rice Flakes	0	1	2	9	0	0
Wheat Krispies	0	1	3	8	0	0

¹² Bourke, John F., Trainer, Colgate University.

¹³ Gill, A. T., "Slats," Basketball Coach, Oregon State College.

¹⁴ Foster, H. E., Basketball Coach, University of Wisconsin.

¹⁵ Hyatt, Chuck, Phillips 66, Bartlesville, Okla.

¹⁶ Bond, Claude, Trainer, Georgia Tech.

¹⁷ Frand, B., Basketball Coach, Arizona State College.

¹⁸ Bee, Clair, Long Island University.

¹⁹ Warren, Bob, Basketball Coach and Trainer, North Carolina State College.

TABLE IX—Continued

Wheatena	0	1	1	9	0	1
Shredded Wheat	0	2	2	6	3	1
Oat Meal	0	0	0	6	3	1
Puffed Wheat	0	2	1	8	1	0
Puffed Rice	0	2	2	7	0	0
Ralston's Food	0	0	4	8	0	0
BREADS						
Biscuits	0	1	2	3	4	5
Toast	5	5	6	7	1	0
Fresh loaf bread	0	0	0	9	8	7
Crackers	6	6	2	3	4	1
VEGETABLES						
Carrots	1	3	7	6	5	1
Spinach	0	1	2	3	4	5
Cauliflower	0	0	8	12	7	3
Cabbage (boiled)	0	0	8	13	6	2
Cabbage (green)	3	6	11	4	5	0
Turnips	6	11	6	3	2	0
Lima beans	5	4	10	6	3	0
Soy beans	3	6	12	7	2	0
Black-eyed peas	2	8	11	3	2	0
Lettuce	3	6	8	8	2	1
Squash	0	0	3	10	8	6
Irish potatoes	3	6	6	7	4	1
Sweet potatoes	0	0	4	10	8	5
Beets	2	3	12	6	4	1
Broccoli	1	4	8	10	5	1
Tomatoes	2	5	10	6	3	3
Green peas	0	2	3	13	7	3
Cucumbers	0	0	3	17	7	2
Green peppers	11	4	3	4	3	2
Onions	9	10	2	2	3	0
Asparagus	9	7	10	4	2	0
Red cabbage	2	6	5	11	4	1
Artichokes	7	6	8	5	1	0
Okra	5	8	8	2	1	1
Parsnips	4	8	5	4	2	0
String beans	6	5	7	7	3	0
Egg plant	0	4	7	10	7	1
Corn	2	6	11	6	1	1
Mushrooms	3	7	10	6	5	0
Celery	6	5	8	7	2	0
Vegetable soup	0	7	1	13	6	3
Rice	0	0	8	11	8	0
FRUITS						
Apples	0	3	12	9	1	0
Oranges	0	1	2	3	4	5
Pears	0	0	3	15	4	5
Strawberries	0	0	1	12	10	6
Bananas	1	1	9	11	6	1
Grapefruit	3	6	14	5	2	0
Tangerines	4	5	5	9	5	0
Apricots	1	0	5	12	6	1
Plums	1	3	4	10	6	1
Orange juice	2	5	5	9	5	2
Raisins	5	4	6	6	5	2
Prunes	0	1	2	8	13	5
Pineapples	1	2	4	12	5	2
Pineapple juice	1	2	6	10	7	3
Grapes	4	1	10	8	3	2
Dates	4	5	7	7	4	0
Cherries	1	4	4	11	6	2
Peaches	1	0	2	11	9	5
Tomato juice	1	0	2	11	9	5
MEATS AND DAIRY PRODUCTS						
Bacon	0	1	2	3	4	5

ter shape, but if one boy goes bad he is looking for an alibi, and he will tell you he was weak from lack of food; therefore, I give them two poached eggs, one or two pieces of toast, tea, and a little marmalade. That overcomes that, and it isn't enough to harm."²⁰

Regarding diet at one university, the coach of basketball gave the situation in his school as follows: "We have no training table in basketball and, therefore, the question of diet does not play an important part in our training program. The boys eat at their various fraternity houses, and it has been my belief for a period of some eighteen years of college basketball coaching that boys do better in athletics, if they eat a well-balanced meal and eat what they desire rather than that which may be prescribed. Each individual has certain food idiosyncrasies and it just does not make sense to require everyone to eat the same meals, when certain foods do not agree with some individuals."²¹

Suggested Menus

BEFORE THE GAME

Two Hours

Fruit cup, tea, toast.
Poached eggs or lamb chop, tea, toast, ice cream.
Dry toast, tea.
Fruit, baked potato, cold lamb or beef, toast, tea.
None at all except for psychology. Small portion roast beef, small baked potato or fruit salad.
Beef broth, lettuce, toast, lemonade.
Orange juice, weak tea, toast, honey.
Two poached eggs on toast, tea, marmalade.
Small steak, 5 ounces, small baked potato, two pieces of buttered toast or dry toast, tea.
Toast, honey, tea.
No special pre-game meal prescribed.
Tomato juice, two lamb chops, baked potato, green peas, dry toast, weak tea, ice cream.

Two to Three Hours

Any normal meal the boy is in the habit of eating.
Melba toast, consommé, clear jelly, sherbet.
Fruit juice, eggs, tea, toast.
I prefer fruit juice, toast, scrambled eggs, small helping, tea.
Two poached eggs, two slices dry whole wheat toast, tea, apple sauce, celery.
Two pieces dry toast, choice of poached egg or 3 ounces of steak, one cup weak tea.
Small slice of beef, baked potato, hot tea, toast.
On game days only we prescribe diet. No training table, and all we ask is common sense eating habits. Fruit cup, toast, tea, and boy may have choice of baked apple or potato or two poached eggs.
It is impossible to give an example you prefer since length of time before the game and number of games in one stretch makes a big difference. In general—baked potato (small), green beans, two eggs, or small steak, toast, tea, peaches, or pineapple.
Try to vary from game to game. Two and one-half hour pre-game time. Sliced oranges, poached eggs on toast, dry toast on side, green tea. Vegetable soup, poached eggs on toast, dry toast on side, tea, sherbet.
Peaches or pears, toast, tea.
Small steak (5 ounces), small baked potato, two pieces of buttered toast or dry toast, tea.
One cup weak tea, dry toast (three pieces), large fresh eggs, custard (freshly

²⁰ Hugo, Frank, Athletic Trainer, Syracuse University.

²¹ Alexander, Louis A., Coach of Basketball, University of Rochester.

made), jam, jelly or honey (only), no butter, etc.

Four-ounce steak, one pat butter, three slices whole wheat toast, honey, small baked potato, one cup hot tea. No ice in water.

Eight-ounce broiled steak, one-half baked potato (small), dry toast, tea, apple sauce, or other fruit.

Very small cup beef broth, poached egg, two pieces of dry toast, no butter, one cup of tea.

We have no training table. Two slices toast, honey, celery, 3-ounce steak, tea.

Small steak or broiled lamb chops, green vegetables (small portion), toast, tea with cream.

Soft boiled or poached eggs, hot tea, toast and butter.

Medium roast beef, baked potato, cold chicken, two sliced tomatoes, tea, toast and honey.

Two lamb chops, one-half baked potato, green peas, one slice toast, butter, tea.

Roast beef, baked potato, toast, tea, custard.

Sliced oranges, poached eggs, two slices of toast, black tea, no butter.

Three to Four Hours

Regular meals as usual. Athletes are asked to refrain from eating between meals, to keep away from anything that is hard to digest and to eat nothing heavy the day of the game. Small medium roast beef, baked potato, peas, two pieces dry toast, hot tea, lemon, apple sauce.

Lettuce and tomato salad, broiled steak, baked potato, toast, tea, baked custard.

Bouillon, one broiled lamb chop or roast beef, small baked potato, two pieces toast, tea.

Hard dry toast, sliced oranges, 6 ounces of steak (broiled), tea, honey.

Two slices dry toast and two scrambled eggs, tea.

Hot weak tea, plain lettuce salad, baked potato, green peas, carrots, six inch by four inch slice of roast beef.

Good steak, baked potato, toast, tea and possibly ice cream.

Vegetable soup, baked potato, peaches or figs, toast, tea or coffee.

Broth, small steak, baked potato, vegetable, toast, tea.

Orange juice, roast beef, well-done baked potato, toast and tea.

Small steak, baked potato, vegetable, tea, hard rolls.

Tea, toast and butter, small piece of meat (beef steak), two vegetables (peas and carrots, small potato, beans).

Toast (two slices), apple sauce, hot tea. If game is at night feed athletes at 2:30 P.M. Soup, steak, potatoes, custard, toast, butter, tea. I believe the light pre-game meal should be eaten two and one-half to three hours before the contest. I prefer an "empty stomach."

Steak or roast beef, soup (vegetable), cool milk, vegetables, pudding or ice cream.

Steak, baked potato, tea, peas.

Poached eggs, toast, baked potato, string beans or spinach or peas, sliced fruit, tea, coffee or water.

Broiled steak, fresh green peas, mashed potatoes, dry toast, tea with lemon, honey sherbet.

Beef broth, lamb chop, toast and honey, small baked potato, stewed tomatoes, custard, hot tea.

One-half grapefruit, broiled steak, baked potato, peas, boiled carrots, dry toast, coffee. For football at 2 P.M. pre-game meal as listed above should be served at 9:45 A.M.

Eggs or small steak, toast, tea, salad.

Fruit cocktail, 6 to 8-ounce steak, baked potato, green beans or spinach, two pieces of toast, two pats butter, coffee or tea, sherbet or ice cream.

Dry toast, small portion roast beef, vegetable salad, tea or poached eggs. Eggs may be substituted for meat and occasionally mashed potatoes may be served.

No special pre-game meal given.

Bouillon, one broiled lamb chop or roast beef, small baked potato, two pieces toast, tea.

Small piece of meat (beef or lamb) small baked potato, fruit, weak tea.

Buttered toast, small baked potato, small steak, fruit cup, tea.

Toast, tea, 4-ounce steak, half peach.

Fresh fruit, lamb chops, toast, tea.

Broth, tea, toast.

Poached egg, dry toast, one-half cup of tea or coffee.

Lamb chops, baked potato, toast, fruit cup.

Fresh fruit, lamb chops, toast, tea.

Four to Five Hours

Fruit cup, 9-ounce broiled steak, me-

Cheese	2	11	9	6	2	0
Nuts	8	11	10	2	1	0
Peanuts	11	8	7	1	0	0
Meat soup	0	2	10	12	3	2
Ham	2	7	8	10	1	0
Pork	12	7	5	4	0	0
Lamb	0	7	9	9	3	1
Beef	0	0	6	9	8	4
Chicken	0	3	11	8	4	1
Turkey	0	7	8	9	4	0
Duck	4	5	8	7	2	0
Fish	1	8	9	6	2	1
Eggs	0	0	1	18	6	3

DESSERTS

Pudding	2	6	6	10	0	0
Crackers (sweet)	1	5	8	9	0	0
Cake	5	7	7	5	0	0
Pie	13	7	8	1	0	0
Jello	0	1	9	9	5	3
Gelatin	0	0	5	10	5	3
Ice Cream	0	0	4	9	7	6

BEVERAGES

Coffee	3	4	5	11	2	0
Tea	0	2	8	10	6	2
Soda water	15	6	2	2	0	1
Beer	19	5	1	0	0	0
Liquors	24	1	1	0	0	0
Lemonades	3	6	8	5	2	2
Limeades	4	6	7	5	3	1
Fruit juices	0	0	4	6	12	7

TABLE X

OPINIONS REGARDING THE BEST WAY TO PREPARE FOODS

	0	1	2	3	4	5
Boiled	0	9	17	32	13	4
Baked	0	15	20	15	12	10
Fried	15	15	2	3	0	0
Broiled	1	24	12	6	14	15
Stewed	2	8	17	17	31	2

dium-sized baked potato, one-fourth head of lettuce, whole wheat toast, ice cream, hot tea, butter.

Beef, baked potato, toast, tea, fruit.

Tea, toast, spinach, carrots, peas, steak, baked potatoes, water, milk, ice cream, baked apple, butter, fruit juice.

Night game. Light breakfast at 10 A.M. Heavy steak and trimmings at 4 P.M.

Boys eat whatever they want. Usually small steak, baked potato, lettuce, tomato salad, tea and pudding.

Two eggs poached, orange juice.

Large glass of orange juice, medium baked potato, lean, broiled or roasted beef, two slices dry toast, plenty celery, drink they prefer. Butter on side.

No milk before a game. No special pre-game meal prescribed.

Some fruit, lamb chop, toast, one vegetable (boiled potato), jello, tea (lemon).

Soup, meat, toast, two vegetables, baked potato, tea, pudding, or jello.

Orange juice, broiled beef steak, baked potato, whole wheat bread toasted, butter and honey or jam, weak tea.

Soup or fruit juice, green salad, meat (steak), two vegetables, toast, hot tea, dessert (ice cream).

Four-ounce steak (broiled), one-half peach, one piece of toast, honey, two cups clear tea.

Eat four hours before game to allow for more complete digestion and for the physiological processes of the body. Beef, Irish potatoes, green peas, toast, tea, butter.

Broiled 8-ounce steak, lettuce salad, vegetable, baked potato, toast, tea, ice cream.

At least five hours before the game. Tomato or orange juice, 8 to 10-ounce steak, dinner salad, baked potato, vegetable, tea, ice cream.

Breakfast steak, carrots, green peas, biscuits or white bread, butter, coffee, tea or milk, chilled water.

AFTER THE GAME

Under One Hour

Cereal, ice cream, milk, eggs, light food. Medium amount of choice.

Varies, usually bowl of vegetable soup, chicken sandwich, milk.

Salad or fruit, ice cream or milk shake, toasted sandwich.

Milk, graham crackers, apples, beef sandwiches.

Fruit juice, milk and a good sandwich or two.

Sandwiches, fruit salad, and milk shakes.

Sandwiches, salad, milk, limeade, or cocoa, ice cream.

Soup, sandwich and milk.

One to Two Hours

Any thing they want within reason.* Fruit or fruit juices and a meat sandwich.

Whatever they wish, except coffee and food that is too heavy.

If traveling late, small steak and meal. If team is at home, light meal of foods digested easily and quickly.

Fairly good meal. Soup, broiled chicken, salad, and ice cream.

Grapefruit, soup, chicken sandwich, hot chocolate.

Soup, sandwich and milk.

Steak, vegetable, drink, dessert.

Choice of general menu.

Orange juice, breakfast food (dry), bacon and tomato sandwich, milkshake.

Simple well-balanced training table meal.

Easily digested foods. Choice of three of following: soups, cereals, bacon, tomato or lettuce sandwich, hot chocolate, ice cream or fruit salad, custard.

Soup, toasted sandwich, milk, coffee, tea, ice cream, fruit.

* A well-balanced meal.
Steak sandwich, and a malted milk.
Choice of small steak or sandwiches, fruit, salad and malted milk.

Cereal, a light lunch with a drink.
Good meal if there is no game the next day. Cereal or eggs, toast, milk if game next day.

Broiled steak, potatoes, peas, ice cream, salad (vegetable), soup.
Hot or cold beef sandwich, fruit, ice cream or malted milk.

Choice of cereals, fruits, soups, milk, toast, ice cream.
Light food. Easy to digest.

Malted milk, sandwich, dry cereal.
Ice cream, milk, regular meal.
Fruit salads, cereals, toast, ice cream, and milk.

Orange juice.
Cereals, milk, cream, ice cream, toast, and sometimes a sandwich.

Full meal if they ate lightly before the game.*
Fruit salad, beef sandwich, hot chocolate or tea.

Small steak, fruit salad, toast, milk.
Grapefruit juice, chicken, steak, milk.
Light food, generally warm.

Cereals, ice cream, milk shakes, not much fried foods.
Light food easy to digest.

Baked potato, small medium roast beef, peas, two pieces of dry toast, hot tea, lemon only, and apple sauce.

Broiled steak, baked potato, toast, tea, coffee or milk, ice cream.
Roast beef, baked potato, vegetable, toast, tea and dessert, milk if desired.

Tomato juice, soup, steak, potato, green vegetable, bread, butter, ice cream sundae, tea, coffee or milk.

Buttermilk, chicken sandwich, apple.
Cereal, small steak or some milk drink.
Chicken sandwich (toasted), tomato soup, salad, with 1000 island dressing, cup custard.

Steak supper usually.
Usually steak, three vegetable, salad and milk.

Soup or fruit juice, steak, potatoes, vegetable, drink, dessert.
Milk or cocoa, salad, milk toast.

Meats, vegetables, milk, bread, butter, dessert, large quantity.
Light food, breakfast food, fruit juice, toasted sandwich. With game the next day this meal should be light.

Two to Three Hours

A light meal.
Substantial meal.
Anything within reason.*

A good meal eaten slowly.
Sandwiches or a dinner with dessert.
Regular dinner occasionally Dry cereal, milk, drink and ice cream.

Milkshake, sandwich—beef, egg and ham.
Small steak (5 ounces), one small baked potato, two pieces of buttered toast or dry toast, tea.

Milkshake, beef sandwich or egg and ham.
* Steak dinner.

Fruit salad, or anything that is light.
Those starred were found on several replies.

Table XI indicates the number of weeks before the start of the season that university and college coaches and trainers feel that basketball practice should start.

In reply to the question, Do you believe in tapering off the work before the game? eighty-three replied in the affirmative, two only answered in the negative.

Do you believe in a full day's rest before the game? Forty-five replied Yes; 39 No.

Table XII shows us the length of time spent in preliminary season workouts.

Table XIII shows the number of workouts a week during the preliminary season. One trainer designated, "One workout per week."

Table XIV shows the opinions of the coaches as to length of time of workouts

after the regular schedule of games has started.

Immediately after the daily practice, do you have your players take their showers or have them cool off by practicing free throws until cooled off and then take their showers? To this question, 38 replied "Immediately after practice"; 47 an-

swered, "Practice free throws and then shower."

Do you have the players take calisthenics before each practice session? Yes, 38; No, 47.

What do you advise the players regarding length and temperature of showers? Three replied "Long"; 48, "Short."

TABLE XI
THE NUMBER OF WEEKS BEFORE THE START OF THE SEASON THAT BASKETBALL PRACTICE SHOULD START

2 weeks	3 weeks	4 weeks	5 weeks	6 weeks	7 weeks	8 weeks
6	20	20	7	18	12	2

TABLE XII
LENGTH OF WORKOUTS IN HOURS

1/2	1	1 1/4	1 1/2	2	2 1/2	3
1	6	1	34	24	4	1

TABLE XIII
WORKOUTS PER WEEK

1	3	4	5	5-6	6
1	13	21	24	3	15

TABLE XIV
LENGTH OF DAILY WORKOUT

3/4	1	1-1 1/2	1 1/2	1 3/4	2	2 1/2	2-3
1	14	41	2	6	17	1	1

TABLE XV
TEMPERATURE OF SHOWERS

Tepid	Cold	Hot	Warm-Cold
42	0	1	17

TABLE XVI
VALUE OF MASSAGE

0	1	2	3	4	5
5	18	14	20	6	6

TABLE XVII
TIME MASSAGE SHOULD BE CONTINUED

0	5	10	10-15	15	20	30	45	50
1	17	22	2	8	3	0	1	0

TABLE XVIII
RATING THE FOLLOWING FORMS OF TREATMENT FOR A PULLED MUSCLE OR OTHER SOFT TISSUE INJURY OF THE BASKETBALL PLAYERS (SCALE 1 TO 15)

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Short very hot pack.....	0	2	2	5	7	6	0	0	2	1	2	0	0	0	0	4
Long hot pack.....	0	6	5	8	4	5	2	0	3	0	3	0	1	0	0	2
Hot and cold alternately.....	0	5	4	6	6	3	0	0	8	0	12	0	1	0	0	5
Diathermy.....	2	12	4	6	5	6	2	0	0	0	3	0	2	1	0	14
Whirlpool.....	1	2	6	5	5	7	1	0	2	1	5	0	2	1	0	4
Cold pack.....	2	5	3	2	0	6	3	2	2	0	4	0	2	0	0	5

TABLE XIX
LENGTH OF APPLICATION FOR THE FOLLOWING FORMS OF TREATMENT

No.	3	6	7	10	15	18	20	25	30	1 hr.	2	7	All night
Short hot pack....	4	10	1	0	6	1	0	0	0	1	0	0	0
Long hot pack....	0	6	1	1	4	5	1	4	1	9	0	1	0
Hot and cold....	0	9	1	0	4	4	1	6	1	9	2	0	0
Diathermy.....	0	0	0	1	4	9	2	11	3	3	0	0	0
Whirlpool.....	2	0	0	1	3	3	1	10	2	5	0	0	1
Cold pack.....	0	4	1	1	2	3	2	5	0	6	4	0	0

TABLE XX
OPINION AS TO THE LENGTH OF TIME AFTER THE INITIAL INJURY THAT THE FOLLOWING FORMS OF TREATMENT WOULD BE APPLIED

	No.	Imm.	10	15	20	30	1	2	12	20	24	36	48	3	4
Short hot pack.....	4	2	0	0	0	0	1	0	3	0	7	0	4	0	0
Long hot pack.....	1	1	0	0	0	0	2	3	3	0	10	2	0	0	1
Hot and cold.....	0	0	0	1	0	1	4	0	4	0	9	1	2	0	0
Diathermy.....	0	0	0	0	0	1	6	1	5	0	14	2	0	1	2
Whirlpool.....	0	2	1	0	0	0	1	0	3	2	15	0	3	0	1
Cold pack.....	0	49	2	3	0	0	0	0	1	0	3	0	0	0	0

Do you have spring practice? Yes, 34; No, 52.

Do you keep a weight chart from the beginning to the end of the basketball season? Yes, 63; No, 23.

Do you have the boys weigh before and after each daily workout and game? Fifty-eight replied Yes; 26 answered No.

Do you have all the players wear ankle supports for each practice session or game regardless of whether they have weak ankles or not? Yes, 35; No, 51.

If you use a support, what kind do you use: the roller bandage, in some form, or adhesive tape? Roller bandage, 28; Tape (adhesive), 24; Both, 25.

In the study of Table 20, the findings indicate that the cold pack applied immediately is the treatment par excellence in the opinions of the various coaches and trainers.

Regarding the use of massage and some other training practices, one coach comments as follows:

"As you see we do not believe in too much massage for basketball players. We believe in a regular diet directly before games. We do not let boys practice with colds. And it pleases me to have coaches, reporters and other players say our team is the best when it comes to condition. They call us the reindeer, the antelope, the fire-ballers; and finally the way to get into condition is to run, run some more and then keep running."²²

What do you do to toughen the skin of the players' feet? Benzoin, 57; Tannic Acid, 8; Salt Solution, 4; Onox, 3; Powder, 3; Nothing, 3; Acetone, 1; Cold Cream, 1; Vaseline, 1; Sodium Hypo Chlorite, 1; Go barefoot occasionally, 1.

Special Questions

- | | Yes | No |
|---|-----|----|
| a. Do you give them an orange, apple, bottle of milk or something else after each period? . . . | 55 | 62 |
| b. Do you believe that sugar feeding before a game is good? . . . | 34 | 36 |
| c. Would you use sugar feeding between halves? . . . | 31 | 32 |
| d. Would you use sugar feeding as early as 24 hours before? . . . | 19 | 44 |
| e. Would you use sugar feeding as early as 48 hours before? . . . | 15 | 44 |
| f. Do you give the players salt tablets daily? . . . | 12 | 70 |
| g. Do you give the players a tablet composed of salt and dextrose? . . . | 6 | 58 |
| h. Do you give the players vitamin pills? . . . | 29 | 46 |
| i. Do you include various foods in your diet as a source of vitamins rather than use the vitamin pills? . . . | 64 | 9 |
| j. Do you give gelatin to your players? . . . | 18 | 65 |

²² Keany, Frank, Basketball Coach, Rhode Island State College.

k. Do you allow the boys to smoke during the basketball season? 9 75

l. Do you think the best policy is to pay no attention to smoking? . . . 4 59

m. Do you permit it in moderation? . . . 4 72

n. Do you believe in let-down periods in training during the regular season? . . . 46 27

In a study of the answers, it is found that a great majority of the coaches and trainers favored the giving of an orange to the basketball player after the workout. Next to oranges, a bottle of milk was favored quite highly. Others favored an apple, apple with a bottle of milk, bouillon (heavily salted), cod liver oil, honey, orange, milk shake and sandwiches.

b. Some of the coaches and trainers preferred giving dextrose rather than sugar before the game. Another always gave his players honey at that time. A few felt that the giving of sugar would help some players, and would be detrimental to others, while some were of the opinion the value of the practice was purely psychological.

c. In the replies, several of the coaches and trainers favored the substitution of dextrose for sugar to be given during half time. A few coaches were of the opinion that sugar feeding at the particular time had a psychological value, and questioned its virtue outside of that; while one held that, "Your body is not in condition to assimilate food at the time."²³

In submitting his answer to Question d, one coach thought maltose or dextrose was of more value than sugar when given to the player twenty-four hours before the game.

As to the number of salt tablets given to the player, the replies to Question f revealed that most of the coaches and trainers gave two tablets. The numbers varied from one to three tablets, and some held that the number given should be governed by the condition of the player, and the amount he perspires; some believed that the tablets helped the player more during the first two or three weeks of practice, than later on in the season.

A few answers to Question g showed that some favored a tablet composed of salt and dextrose as it seemed to be more palatable to the player.

As to the giving of vitamin pills to the players the replies to Question h indicates that if they are prescribed, a vitamin pill composed of various vitamins is more popular with a majority of the coaches and trainers than a tablet composed of one particular vitamin.

Regarding vitamin B₁ tablets and their values, a number concluded that they were helpful, for the following reasons: Vi-

tamin B₁ serves as a stimulant to the appetite, and wards off colds. Others expressed their viewpoint by replies such as the following statements: "Very good in some cases"; "Have been unable to determine"; "Have no definite way to check"; "Depends on the individual"; "Okay"; "If needed, of value"; "Excellent"; "Seems to help some"; "Uncertain"; "Very doubtful"; "Do not use much on basketball men"; "Good"; "Exhaustive tests in our fatigue laboratory or department of physics show no value," according to one of the trainers.²⁴

As to depending upon the foods in their diet as a source of obtaining their vitamins, fifty-six favored the practice, while nine did not, according to the answers to Question i.

As to the time which was thought best for the gelatin to be given the player, most of the coaches and trainers thought it best to give it after practice. A few differences in viewpoint were noticed, however, through such statements as the following: During the "A.M. and P.M."; "Noon"; "With night meals"; "Following the meal"; "Twice daily"; and "On trips."

The coaches and trainers in their response to Question j vary in their opinions as to the value of gelatin in the diet of the basketball players. Some extolled its virtues, while others seemed as strongly opposed. Among the replies, statements as the following: "Very good"; "Undecided"; "No particular advantage except psychological"; "Fair"; "Aids greatly"; "No, it's the bunk"; "Makes an athlete lazy"; "Yes and no"; is the reply of one of the basketball coaches.²⁵ "Okay"; "No way to check"; "Had no experience, depends on individual"; "Nil"; "Players believe it helps"; "Cannot say"; "No validity of good results"; and "Very good." "In case of need it is of definite value, etc."; ²⁶ and "Just another source of protein." One of the oldest of conditioners of athletes had this to say regarding the subject of giving sugar, gelatin, etc., to the basketball player: "This sugar, gelatin, vitamin and salt tablets fad is only a great expense to the school, and worry and fussing for trainer and coach. The above should be taken care of by the regular training table meal, and regular meals of the player at his boarding place. I have trained many a championship team in my time, without all this modern streamlined frills, as vitamins, gelatin, etc. Players using salt tablets at a gymnasium, themselves usually are made sick. I also have seen this after practice and between halves."²⁷

The replies to Questions k, l and m indicating the attitude of the various coaches and trainers toward smoking, showed that

²⁴ Cox, James M., Trainer, Harvard University.
²⁵ Cushman, Cecil, Basketball Coach, University of Redlands.

²⁶ Dean, Everett S., Basketball Coach, Stanford University.

²⁷ De Victor, Ollie J., Head Trainer, University of Missouri.

smoking by the basketball player during the season was simply out.

By a majority of almost two to one they favored a let-down period in training during the regular season. We notice this in studying the results of the tabulation on replies to Question n. Among the affirmative replies, some felt that the let-down period was especially important during mid-semester examination week; during the holidays that occurred during the regular basketball season, or when a boy shows signs of staleness. One coach felt that the period "should not be too much of a break."²⁸ A trainer made the following statement in answering Question n, "Depends on mental and physical condition of players."²⁹ One trainer went on to say, "No, I do not believe in staleness."³⁰ Still another said, "If not overworked, let-down is mostly psychological."³¹

o. What drinks do you prefer between halves?

The drink that the coach gives the basketball player during the half of the game, and the number of supporters for the particular product of which the player partakes is indicated in the following summary:

²⁸ Wallace, Stanley M., Basketball Coach, University of Maine.

²⁹ Dees, Neal Elwyn, Trainer, University of Nebraska.

³⁰ Chambers, Michael C., Trainer, University of California at Los Angeles.

³¹ Jahns, Wilbur, Basketball Coach, University of California at Los Angeles.

Name of Drink, Etc.	Number
Eating oranges	38
Give nothing between halves.	18
Orange juice	14
Water	9
Dextrose	4
Coffee	4
Lemon	3
Tea	3
Bouillon (salty)	2
Tea (cool)	1
Lump sugar	1
Hershey bar	1
Cocoa	1
Sugar	1
Lukewarm water	1
Wash out mouth with water.	1
One-half cup orange juice and honey	1

The coaches and trainers of the college and university basketball players of to-

Examination Questions for Student Trainers Course

SPECIMEN test questions on the high school lessons as printed in the Trainers Section have appeared in earlier issues. Will those coaches and trainers who wish to have their student trainers take the final examination, please send the names of the boys to the home office of the National Athletic Trainers Association not later than May 20.—Bill Frey, Secretary.

day recognize the individual requirements as to the diet and amount of practice that are necessary. There is a strong tendency toward allowing the basketball player to partake only of those foods that agree with him, and provide for his physical requirements. The opinions regarding the inquiries as to practice sessions indicate that they are controlled by common sense. The results of the compiled questionnaires show that moderate indulgence may be followed by the training of basketball players for the consistently best; that each basketball player is an individual and must be treated as such; and that various food fads are contra-indicated.

It seems to me that the results of this study will prove very helpful to coaches and trainers in high schools as well as in colleges and universities.

From the results compiled there are very definite and final conclusions drawn that can be applied not only to basketball players, but to the participants in the other sports as well.

The co-operation of the many university and college basketball coaches and trainers whose returned questionnaires made this study possible is greatly appreciated. I am equally grateful to two of my students, John Hooper and Robert Sheridan, who are majoring in physical education for their assistance in the compilation of the findings of this study.

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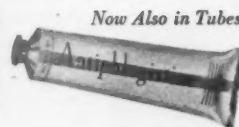
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Financing Athletic Injuries

By R. C. Glass
Athletic Director, Eaton, Ohio, High School

THE financing of athletics has long been a problem in the small high school, especially so in those schools sponsoring football. Two items of expense which cannot be anticipated with much accuracy are the medical and hospital bills. In most cases the parents expect the school to bear, at least, part of the bill. In order to keep athletics in good standing in the community, the school athletic fund is obliged to pay the bills often resulting in an unexpected deficit in the athletic budget for that year.

In the fall of 1940, we decided to make some special provision for meeting obligations, due to athletic injuries. We considered athletic insurance and found the cost too high for our resources. We then devised the following plan which is operating the second season with good results.

At the beginning of the athletic season each boy, who participates, pays into the medical fund one dollar. This dollar is matched by one, set aside by the athletic association. The fund, thus created, is set aside to meet the cost of treating athletic injuries incurred during the current season. Each boy contributes only one dollar per school year, regardless of the number of sports in which he may participate.

At the end of the school year all medical bills incurred during that year are totaled. If the fund is sufficient, all bills are paid in full. If the total bills are in excess of the fund, the bills are paid on a pro rata basis—the boy assuming responsibility for what ever balance may be left on his bills.

The first year we paid all bills in full and had a small balance to carry over to the second year. To this was added a small sum realized from the annual athletic banquet. With this balance in reserve for this, our second season, we have a fairly nice sum with which we expect to pay again all bills in full.

The first season is the most difficult to finance. After one good season a reserve is built up and it will more than take care of any ordinary medical bills. By pro rating the expenditures one boy does not get all the financial help in case of an unusually large bill.

Thus far the scheme has worked flawlessly and has had the unanimous support of the boys and parents. It has created a better feeling toward the school athletic program and has resulted in more boys being permitted to play football.

We have drawn a list of regulations which govern the operation of the fund. Each boy must read these when he pays his dollar. He is then given a copy to take to his parents along with the athletic card

which his parent or guardian must sign. This assures an understanding between the parents and the school. The following is a list of the rules governing the operation of our athletic injury fund:

Regulations Governing Athletic Injury Fund

1. The purpose of this fund shall be, to provide some financial aid for injuries sustained by members of athletic squads of Eaton High School.

2. The fee for membership in this fund shall be determined by the athletic committee of Eaton High School, and shall not exceed \$1.00 for any one school year.

3. Upon payment of fee, a player shall receive financial aid for injuries received in any sport participated in during the current school year.

4. The Eaton High School Athletic Association shall contribute, to this fund, an amount equal to the total amount contributed by players for the current school year.

5. Any balance in this fund at the close of any school year shall constitute a continuing fund for the succeeding school year, and may not be used for any purpose other than that stated above.

6. Protection from this fund shall apply only to members of athletic squads who are at the time of injury, training for, or participating in, interscholastic sports, under the supervision of an authorized member of the school faculty.

7. The amount of financial assistance received by any one player shall be determined by the amount of money the fund has, and the total amount of medical bills incurred by athletic teams during the current school year, payable on a pro rata basis.

8. All claims for financial assistance must be presented in writing, and accompanied by itemized statements from an approved physician.

9. Eaton High School Athletic Association shall not be responsible for compensation for injuries received by players who have not contributed the fee for the current school year, or for an amount greater than the balance in the fund at the time the claim is presented.

10. To be eligible for financial aid, a player must report all injuries promptly to the faculty member in charge of the sport in which the injury was sustained.

11. No claims shall be paid for injuries received before or after the current school year.

12. Only one settlement shall be made by the Eaton High School Athletic Asso-

ciation, for any one injury.

13. This fund shall be used for injuries only. No claims for medical service due to diseases shall be honored.

14. No player shall apply to a physician for medical aid, for injuries received on the athletic field or court, without the permission of the faculty member in charge of the sport.

15. The athletic committee shall consist of the high school principal, the athletic director, and the superintendent of schools.

16. It is understood that this is the only source of compensation for injuries and that no additional aid can be expected from any other school source.

17. I understand fully the provisions of this agreement and hereby make application for membership.

Signed
Athlete

H. S. Principal
Athletic Director

Are Junior High Athletic Programs Worth While?

By Donald E. Potts

Coach Junior High School, Gering, Nebraska

IN the January, 1942, edition of The Nebraska Educational Journal an article entitled *Are Junior High Athletic Programs Worth While?* was published as a short introduction to a survey we were planning at Gering regarding the merits of a junior high athletic program. Following this article, a postal questionnaire was sent to 150 schools and school men interested in junior high athletic programs in Nebraska, Colorado, and Wyoming, with the bulk of the number going to Nebraska schools. One hundred and six cards were returned. Two were returned unchecked, stating no data was available, and some did not check certain individual questions either by mistake or intention. However, we felt a very fine response was made in almost every incident. Some added letters and additional information, which was very gratifying and helpful.

The following is an analysis of the 106 cards returned from the 150 mailed, and the manner in which the ten questions were checked. Numbers in parentheses indicate the number of schools favoring that part of the question.

1. What grades are included in your junior high program? 6 (26), 7 (90), 8 (96), 9 (41).

2. What sports are included in your junior high program? Basketball (86), Track (51), Football (47), Softball (19).

3. Length of practice period? 30 min. (6), 60 min. (59), 90 min. (29), 120 min. (1).

4. Number of practice periods per week? 2 periods (29), 3 periods (43), 4 periods (19), 5 periods (10).



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5. What time of day are practice periods held? A.M. (20), P.M. (81), Evening (2).

6. What type of competition do your boys play? Intramural (23), Interscholastic (24), Both (44).

7. How do you finance your junior high athletic program? School Budget (39), Activity Fund (41), Gate Receipts (9).

8. Are junior high athletics helpful to a boy in high school athletics? Yes (99), No (2).

9. Are junior high athletics harmful to the health of the boys? Yes (2), No (98).

10. Are junior high school boys more likely to be injured? Yes (7), No (89), Undecided (5).

Question 1 showed almost a unanimous response for grades 7-8, with the 6th and 9th grades following. Two schools also included the fifth grade in their junior high program. Personally, I think grades 7-8-9 are most desirable. If the freshmen are not included, then I would include 6th grade.

As to the number of practice periods per week in Question 4, the variation was from one to five. Three was recommended by the greater number. The school schedule may determine this number.

Coaches and superintendents, in answering Question 8, were quite unanimous in their belief that junior high school athletics were beneficial to a boy in high school competition. It was interesting to note that many emphasized their answers by saying "Definitely," or "Most certainly." Many schools have been convinced that a well-rounded, soundly administered, junior high athletic program has contributed to their high school program.

Are junior high boys more likely to injury, Question 10, found a large majority feeling they were *not*, as long as they were competing among boys of their own age and size, observed rules of play for junior high contests such as length of time of quarters, used proper equipment and were properly supervised. Suggestions here were made that doctors' examinations should be used, and supervision, competition, equipment should be carefully watched over.

One coach commented that he had worked with junior high boys in athletics for twenty years, with 20-45 boys each year and had had only one injury. That is a remarkable record, and probably above average, but encouraging to know.

In conclusion, I have been convinced for a long time that boys of 12-15 years of age are going to have their football games during the football season, their basketball games and softball, etc., during the various seasons of high school participation, and that they are much less likely to be injured in a supervised athletic period after school than in unsupervised play on a vacant lot across the street.

Fist Ball

(Continued from page 23)

center after each goal and free shot. Time is stopped only during a free shot. Can have face-off anywhere on floor if two opposing players hold the ball. The ball is hit with the fist; the ball can be moved or held stationary on the floor as long as it is not lifted off the floor. There can be body contact.

Position of Players: 1. The guard can never cross the center of the court on offense. The center can go anywhere on offense and defense, but forwards cannot go back to help the guards on defense. 2. At the beginning of the game, the players line up as follows: The center over ball; the right forward and the left forward in a straight line behind the center, and the guard behind the forwards.

Scores: 1. A goal counts three points. 2. A free shot counts one point.

Official Scorer: The official scorer should include goals, penalty shots, fouls, time played by each player.

The Easiest Basket in Basketball

(Continued from page 20)

does not go down into the basket, the ball falling directly down on the ring rises upward, and the player will have more time to gather himself when he returns to the floor, springing up for another try.

In teaching the boys the jump, which is most important, we employ the same principle as a high jumper uses. The weight of the man jumping should be over the take-off foot. At first this often requires a short step to get into the correct jumping position, afterwards it comes to the player automatically. When a man jumps into the air we have him spread his legs, especially when he is coming down, so that he will have a wide base when landing to keep his balance and stay in the play for the next jump. We want repeaters, not one-jump Johns.

We do not put english on the ball; we try to lay it up against the backboard or into the basket. Englishing the ball will assist in making some shots, but to be most effective, we try to keep the shot as simple as possible.

Our method for practicing tip-ins is to group four players near the basket, and have two men shooting out about twenty feet from the basket. Players under the basket are not allowed to catch the ball or hold it in their hands momentarily. They keep tipping the ball, until a basket is made or possession is lost by the ball falling to the floor. The two players, stationed out twenty feet, shoot from different angles, so that the tip-in men can learn how to judge the ball rebounding from the backboard and basket.



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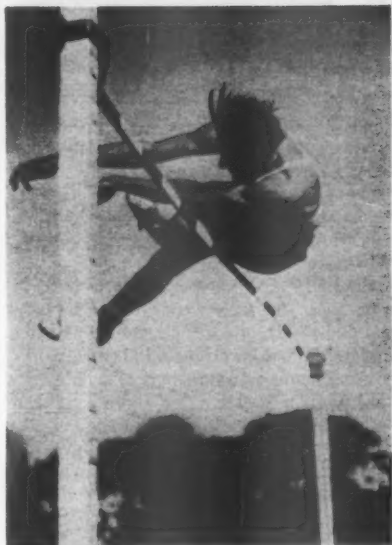
Working on this shot ten or fifteen minutes a day has paid dividends; in some games twenty per cent of our scoring has been by tipping the ball into the basket. It is the easiest way I know of to make two points.

Meet Your Neighbors from South America

(Continued from page 15)

was present to grace the occasion and competition was keen up until the last event, with Argentina carrying off the honors. One can say that this championship was the jumping-off place for Brazil's interest in track and field athletics. The late Fred Brown, a graduate of the George Williams College, was the pioneer of Brazil's athletic life in many sports, having been "director tecnico" of the luxurious Fluminense Club for many years. Later he guided the destinies of the "Confederación Brasileña de Deportes" where he had the rare opportunity of influencing the sport life of the nation. Henry Sims, for over twenty years physical director of the Y.M.C.A. in Rio made a notable contribution through the introduction of modern physical education, giving all of his work a distinctive American orientation. My friend Hogarty, coach of the first Brazilian Olympic Team at Paris, 1924, made his contribution in the great city of Sao Paulo. Here he made the initial effort in track and field athletics in southern Brazil. Some of his former pupils are today at the helm and carrying on splendidly as witnessed by the results of the last South American Championships.

Argentina can compete in several events with probabilities of success. These are the hop, step and jump, the hammer, the 3,000, 5,000 and 10,000 meters. Ibarra's time of 30 minutes and 45 seconds for 10,000 meters will stand any challenge made by North Americans even with Don Lash doing the running. Brazil has splendid material for the dashes, the hammer, and the pole vault, while Chile should lead in one or two events. The young Chilean Guido Hannig who beat the South American record by a leap of 1.94 will improve as he uses the Western Roll and is only a youngster. There is a Peruvian by the



Guido Hannig, Chilean, whose jump of 1.94 puts him in the championship class for the Pan American games.



José Bento de Assis, Brazilian, whose running in the 100 and 200 meters establishes him as the best South American sprinter of today.



Manuel Consiglieri, Peruvian, who holds the South American title in the discus.

name of Consiglieri whose throw of 46 meters, 40 centimeters was a record for this continent.

Since the Argentine, Luis Brunetto, made his famous leap of 15.425 at the Paris Olympics, beating the Olympic record in his first effort, track and field have

played an important part in the athletic life of the River Plate countries, as well as Brazil and Peru. Who fails to recall the great feat of the 19-year old Argentine, Zabala, as he beat the field in the Marathon at Los Angeles? Or the running of Bianchi Lutti in the 200 meters, when he beat the Olympic record in his heat?

All in all, competition should be keen in these regional games. Great preparations are being made here by the Argentine Olympic Committee, headed by Dr. Juan

Carlos Palacios, a man whose understanding of matters concerning sport dates back some twenty years when he was president of the beautiful University Club. There is great expectation already, and plans are in full sway for the accommodation of the many delegations. An Olympic village is under construction on the grounds occupied by the fashionable Country Club of Buenos Aires, Don Torcuato.

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The Teaching of Rhythm to Distance Runners

(Continued from page 14)

any particular race, or any time thereafter, to be the cause of, or result in, any deleterious effects to the person engaging in that exercise.

According to Schneider rhythm is one of the fundamental properties of the nervous system. Whether we speak of rhythm as an external force or an internal one, as a direct or indirect medium, its importance can not be minimized. Music accompanying troops on long marches has long been employed as a means of keeping up army morale, and army morale is dependent upon, among other things, the degree to which its men can continue its vigorous routine without becoming fatigued. It seems logical to assume, therefore, that the rhythm caught from the strains of the fife and drum provide an indirect medium through which the general pattern of movement, capable of being continued for long periods of time, has been the motivating and regulating stimulus. If this assumption is correct, the response to a rhythmic stimulus would, it appears, likewise be rhythmic.

Schmidt and Sputh in answering the question, "How can muscles be trained so that they will fatigue very little?" point to two factors: (1) importance of training; (2) the steady rhythmical alternation of contraction and relaxation which usually takes place in endurance exercise. This we may assume to be a muscular rhythm or a response to rhythmic reflexes established in the nervous system. The degree to which the nervous system is taxed in endurance exercise is slight except at the beginning of the exercise. The fact that there has been shown to exist a greater quantity of lactic acid in the blood immediately after an exercise has begun, and for a few minutes after the exercise has been in progress, would tend to support the conclusion that those motions not done rhythmically require an excess of energy; and that this energy, utilized in unnecessary motions is wasted energy. Running, like walking, is a learned activity. Proper form in the beginning is a necessity. Unless the athlete learns to run with ease (with a degree of form in which there is a balance of tensions) the training program is fruitless.

Respiration (the process of breathing) is regulated by the medulla oblongata. It is considered to be an automatic function; however, it can be regulated to some degree by the will. The fact that breathing is an automatic process indicates that the nerves sending the impulses and the muscles responding do so automatically. In other words, their action, which makes possible the process of breathing, may be considered as rhythmic reflexes. "The building up of a series of rhythmic reflexes which contain no unnecessary motions is a

potent factor in preventing fatigue," says Schneider.

A study of the training program used by many of the outstanding distance runners shows a tendency to follow a two-fold course. First there is what we call the preliminary period of from six to eight weeks of cross-country running including distances of from two to ten miles. As the season progresses the athlete cuts down on his long distance runs and works on distances slightly above or equal to the distance at which he expects to compete, in the average collegiate meets; this distance varies from three to six miles, with four as the average. Just what chemical changes occur in the blood content, etc., during this period of preliminary training is not of particular concern at this time; it may be assumed, however, that, as the athlete continues to practice, he conditions these automatic rhythmic reflexes to become rhythmic to the pace and distance traveled. In other words, the muscular efficiency is stepped up and accompanying this, we find the rhythmic reflex of breathing has also been adjusted to meet the demands of the muscles.

The second phase of the training program finds the runner indoors preparing for the indoor season. With the cross-country conditioning comes increased muscular efficiency and the rhythmic reflexes of breathing adjusted to the particular distance traveled and the particular pace. Once indoors the environment changes. Slow jogging periods must precede any vigorous workouts to condition the leg muscles to the harder surface, and also to condition the breathing reflexes to the less humid atmosphere. Because the competition indoors is usually not over two miles, the distance runner confines his so-called endurance workouts to distances of slightly over two miles, and these are not run at top speed. With the preliminary or cross-country training, he is assured of the endurance or stamina necessary to run two miles. Consequently, he endeavors to step up the pace at which he expects to run the distance in competition. His workouts then are confined to distances of two-miles or less at the pace desired; i.e., if a ten minute two-mile is the aim for a particular meet, the workouts during the week may consist of a half-mile or a mile, mile-and-a-quarter, mile-and-a-half, mile-and-three-quarters at the pace equal to a ten-minute two-mile. Thus, the athlete conditions his muscles to become efficient at two miles at a pace which will give him a time of ten minutes and at the same time adjust himself to the less humid atmosphere, and to running on a hard surface, the banked curves, etc. The adjustment to these different environmental conditions requires practice on training in such an environ-

ment to condition the body to the new conditions. The change in the rhythmic reflex of breathing is due primarily to the effects of the exercises, not to the particular conditions under which the exercise is carried out.

From the above brief discussion of the preliminary training period, it would appear that the major considerations in a training program for distance running include so-called endurance and pace workouts. The observable result of such workouts seems to indicate that there has taken place quite definite changes in the musculature, the blood, and the organs in general. The nature of these changes is such that the athlete is able to run faster over a given distance, and with greater efficiency, than before he began training.

In the above discussion there has been mentioned such terms as increased muscular efficiency and the rhythmic reflexes. The former has been shown by recent studies to be one of the beneficial results of exercise. The latter, a term taken from Schneider, "Physiology of Muscular Activity," refers to a fundamental property of the nervous system. In commenting further upon this fundamental property of the nervous system, Schneider indicates that the building up of a series of these rhythmic reflexes is a potent factor in preventing fatigue. An attempt has been made to show how the process of breathing could be considered as a rhythmic reflex and how, during the course of a distance runner's training period, an adjustment has taken place in the muscles of breathing, whereby the products of metabolism have been adequately taken care of to assure the athlete that he will be able to "go the distance" and finish the race without undue muscular strains which generally accompany an exercise of endurance performed by an untrained individual.

Swimming as a Factor in Winning the War

(Continued from page 12)

water, from three to three and one-half feet deep. Much deeper units are necessary, however, for teaching elementary or advanced diving, or for jumping in from standard heights approximating the deck of a ship. Light portable and temporary swimming pools may be erected quickly out of water-proof canvas for use on board ship or elsewhere, if hurried installations are necessary. More permanent structures may be installed later. Stationary or floating basins or pools or cribs with controlled area and depth suitable for beginners may be built in lakes or rivers, if the water is free from contamination. Wherever possible, however, more permanent installa-

tions should be put in as soon as practicable and in the temperate zone they should be housed with protection from the weather or at least heated. Accessory facilities for heating, filtration, disinfection, recirculation, showers and toilets should be included. The biggest problem in the sanitation of swimming pools is that of providing meticulously for the health and cleanliness of all pool users. Therefore, appropriate rules and regulations for pool users must be set up and enforced with military precision. It should be the responsibility of the camp sanitary engineer to give appropriate health supervision in the form of routine bacteriological and other tests.

Judged on the basis of experience in colleges and universities, the ideal camp swimming plant for 10,000 to 15,000 soldiers should consist of three separate, but closely associated units. There should be a large pool for beginners in swimming, 75 feet in width, 165 feet in length, and with a depth range from 3½ feet to 7 feet; another unit of the same size for advanced swimming including intramural meets and possibly water games, and a third pool 75 feet by 60 feet, ranging in depth from 10 feet to 16 feet for diving and tower work. In smaller cantonments, a single all-round pool 60 feet by 75 feet in area, with a shallow zone for the teaching of beginners in swimming, an intermediate zone for general swimming activities, and a deep area for diving will suffice. The zones should be approximately equal in area and separated from each other by floating surface lane markers. The pool sizes given here may seem somewhat arbitrary. They do, however, conform to the best English and metric standard distances and, therefore, afford opportunities for valuable comparisons. The above pool units would accommodate a very large and diversified program in swimming and water safety, including competitive meets and games.

The business of planning and constructing, operating, using, maintaining, and administering one or more swimming pool units is a job of no little magnitude which requires careful consideration. *Swimming Pool Standards* by the writer of this article, published by A. S. Barnes and Company, New York City, in 1939, represents extensive research in each of these areas and has resulted in the standards contained therein. Although designed primarily for educational institutions the standards are fully suited to the requirements of swimming pools for military purposes. The architect, the engineer, the pool operator, the pool users, the instructors and coaches and the administrative officers would all find suitable standards in accordance with their duties and responsibilities.

A compilation of state and local board of health rules and regulations concerning swimming pools and their operation, as well as an extensive bibliography on the



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literature of the swimming pool is also to be found in this treatise.

Concurrently with providing the best possible opportunities for the development of swimming for our fighting forces, we must carry on an excellent program for those still on the home-front who should shortly be qualified to enter the service of our country. In reality the instructional program in aquatics for all should be car-

ried on in our elementary and secondary schools. Therefore, our facilities should be fully utilized and increased and our work in these areas intensified and expanded. In this way we can do our share to see that those now on the home-front acquire superior qualifications for the high requirements now so vital in the war. The specialized swimming herein described is necessary and fundamental to safety, for the

assistance of those of our own members who are in danger of drowning, for reconnaissance and other offensive requirements and for wholesome organic development. Moreover, most of the knowledge skills and experiences gained in military swimming are likely to have lifelong utility for recreation after victory in the war has been attained. SO LET'S KEEP 'EM SWIMMING.

The Intramural "V" Physical Fitness Test at the University of Illinois

(Continued from page 5)

golf, free throw, archery golf, and archery.

Adaptation of the Intramural Sports Program to War-Time Conditions

1. Activities in the program are being re-evaluated.

2. Emphasis is changing, that is, recreation may be defended from a mental, hygienic viewpoint (relieving tensions) rather than from a leisure-time viewpoint.

3. Physical efficiency is being encouraged.

4. In spite of somewhat reduced student enrollment, the endeavor is being made to encourage greater participation in vigorous, endurance-promoting activities.

5. Individual conditioning activities that have been introduced are: fencing, handball, gymnastics and weight lifting.

6. Team sports will be emphasized: Ice hockey was introduced this past winter; touch football will be introduced next fall. Other activities to be considered include: steeplechase, cross-country, rugby football, lacrosse and boxing.

7. Other vigorous activities in recreational sports are being promoted by Mr. Max Chapman in the sports clubs.

8. Sigma Delta Psi (National All-Around Athlete Fraternity) is being strongly encouraged.

9. Endeavor to co-operate with military department.

10. Extension of the program of intramural and recreational sports during the summer session and increase in competitive games.

11. Three conditioning periods, one required for the "V" test, under the supervision of the Physical Fitness Clinic in addition to regular health examinations.

12. The Illini Physical Fitness "V" (Victory) Test has been introduced with emphasis upon: endurance, power, agility, strength and balance, and flexibility.

The Illini Intramural "V" Physical Fitness Test

The Illini Intramural "V" Test is perhaps the first attempt to introduce a physical fitness test into an extra-curricular program. The prerequisites to this

course are: 1. Medical Examination. 2. Cardiovascular Test. 3. Physique. 4. Preliminary Conditioning Tests. 5. Ability to Swim 440 Yards.

Items and Standards of the "V" Test

Balance and Flexibility (1 House Point; 5 Intramural Individual Points)

1. *Recovery from Dizziness*: Rotate five times, eyes closed, finger on floor, then immediately walk line 10 feet by 10 inches.

2. *Rope Swinging or Vehicle Dismount*: (a) Swing on rope from tower 8 feet high and drop with half-turn, landing on balance. (b) Skillful dismount from vehicle moving 10 miles per hour. (c) Break-fall dismount from 8-foot height.

*3. *Trunk Flexion*: 10 inches from floor.

*4. *Trunk Extension*: 20 inches from floor.

*5. *Shoulder Flexibility*: 15 inches from floor.

Agility (1 House Point; 5 Intramural Individual Points)

6. *Forward and Backward "Safe"-Fall*: Demonstrate form for each 3 times.

7. *Skipping Forward and Backward Over Stick*: 10 times or leg 3 times or running forward dive and rolls covering 8 feet.

8. *Vault*: Over bar 5 feet high or over man same height or over 4 men.

9. *30-Foot Agility Run-Climb Rope or Ladder-Down-Run Back*: 20.0 seconds.

10. *Agility Exercise*: 24 counts in 12.0 seconds.

Strength (1 House Point; 5 Intramural Individual Points)

11. *Extension Press-up*: Body 4 inches off floor, 5.0 seconds.

12. *Half-lever Support*: (a) 10.0 seconds from floor; (b) V support 2 minutes.

13. *Pick-up on Shoulders, Kneel, Lower*: Man of own weight.

14. *Leg Lifts and Body Levers*: 25 each, successively.

(* Cureton Technique)

15. *Chin the Bar*: 12 times.

Power (1 House Point; 5 Intramural Individual Points)

16. *100-Yard Sprint*: Circular track 13.0 seconds; outdoor 12.0 seconds.

17. *Running Broad Jump*: 13 feet, 6 inches with 30-foot run indoors; 15 feet outdoors.

18. *Rope Climb*: 19-foot rope in 12.0 seconds.

19. *6 Pound Medicine Ball Throw*: Over 30-foot beam or 50 feet horizontally.

20. *Vertical Jump*: 20 inches above reach.

Endurance (1 House Point; 5 Intramural Individual Points)

21. *Lift an "Out" Man*: To saddle-back carry: (\pm 10 pounds).

22. *Walk and Run With Subject*: Saddle-back carry.

23. *Rest or Walk 60 Seconds*, change to piggy-back, carry 440 yards.

24. *Walk or Run 2 Miles*: 20 minutes total.

25. *Swim 440 Yards* in 10 minutes. (Can be checked off at any time from 4:30 p.m. to 6:00 p.m. in Old Gym Pool.)

Awards

1. An attractive trophy will be presented to the fraternity or ward which accumulates the greatest number of points.

2. Medals will be awarded at the end of the semester to the outstanding individual in each of the following:

1. Endurance (best time)
2. Power (best time)
3. Agility
4. Strength
5. Balance and Flexibility
6. All-Around

3. A "V" Test Achievement Card will be given to each boy passing the entire test.

4. Five House Points will be awarded and 25 Intramural Individual Points.

Note: If an individual is unable to pass the complete test, 1 House Point will be awarded for each one of the five items that he passes successfully; 5 Intramural Individual Points for the prerequisite requirements.

Conservation the Key-Word Today

THE farther we advance in our war-effort, the more the word conservation means to us. Haven't you thought many times in the last few weeks of the truth of the expression that we as a nation are a wasteful people? Haven't you felt a thrill when, instead of throwing some equipment away or putting it aside for the little fellows, you order your equipment man to have it carefully put away for next year for your varsity squad? Aren't those discarded golf balls a valuable find these days?

Now comes the word for conserving bladders which are the important part of basketballs, footballs, volley balls and soccer balls. There is a tendency on the part of some coaches to throw aside a basketball or football when the case begins to wear out. Manufacturers are sending out word, asking coaches and equipment managers to return to them the worn-out balls, so that the bladders may be replaced in new cases. In many instances, the wear and tear on the bladder is negligible compared with that of the case. Should the time come when it is impossible to secure bladders, the manufacturers will be able to supply inflated balls of various kinds by using the old bladders.

Small leaks may be detected by immersion of the balls in water or by coating the outside of the bladder with ordinary soapsuds and noting the presence of bubbles. The small leaks should be repaired at once. Coaches should take special interest in the storing of their equipment this summer. Bladders should be stored in a cool place.

Not only from the standpoint of economy but also from the standpoint of continuing our sports, should care as outlined above be taken. There must be inflated goods to keep our boys playing the contact games so vitally needed now.

Use the Coupon Attached

FOR this month, we are carrying again the questionnaire on the mileage of school buses for school purposes exclusively, and for the transportation of athletic teams. If you have not returned this coupon will you do so at once?

It has been interesting to find that the total number of miles in transporting athletic teams has been very small as compared with the total amount covered by the buses for school purposes exclusively. The per cent since our last report is still three.

COACHES READY REFERENCE BUYING GUIDE

SIMPLY CUT ALONG PERFORATING RULE, FOLD SEAL WITH PASTE. WE PAY POSTAGE.

COMPLETE LINE

Goldsmith, P., Sons Inc. 19 ☐ Catalogue
Reach, Wright & Ditson 41 ☐ Fall Catalogue
Spalding & Bros., A. G. 1, 45 ☐ Fall Catalogue
Wilson Sporting Goods Company 3 ☐ Fall Catalogue

SHOES

Riddell, Inc., John T. Cover 2 ☐ Catalogue
Witchell-Sheill 4 ☐ Catalogue

SOCKS

Nelson Knitting Co. 21 ☐ Information

CLOTHING

Kahnfast Satins 23 ☐ Swatch and names of manufacturers featuring these fabrics

MEDICAL

Denver Chemical Mfg. Co. 37 ☐ Information on Antiphlogistine
Dolge Company, C. B. 40 ☐ Brochure on Athletes Foot

RUBBER COVERED BALLS

Voit Rubber Corp., W. J. 40 ☐ Catalogue

BOXING RINGS AND MATS

National Sports Equipment Co. 23 ☐ New Catalogue A42

BASEBALL AND SOFTBALL BATS

Hillierich & Bradsby Co. 43 ☐ Catalogue

BASEBALL BASES

National Sports Equipment Co. 40 ☐ Folder

TOWELS

Geo. McArthur & Sons 42 ☐ Booklet on Towel Systems

POWER MOWERS

Toro Mfg. Co. 39 ☐ Information

RECONDITIONING OF ATHLETIC EQUIPMENT

Ivory System Cover 4 ☐ Information on Ivory System Service
☐ Place Name on "Observer" List
☐ Sample & Prices Rawhide Laces
☐ Sample & Prices Leather Oil

BANK BOARDS

Medart Mfg. Co., Fred 42 ☐ Information

COACHING SCHOOLS

Colorado Coaching School 23 ☐ Information
Indiana Coaching School 45 ☐ Information
Lawrence Tech Coaching School 41 ☐ Information
Tennessee Coaching School 40 ☐ Information

BOOKS TO BE BILLED

Baseball Coaching Kit 38 ☐ \$1.75
Baseball Instruction Course 38 ☐ \$.75
Data Sheets 38 ☐ \$.50
Athletic Journal Binders 40 ☐ \$.30

Numbers following name of manufacturer refer to page on which advertisement appears.

1. TOTAL AMOUNT OF MILES DRIVEN BY ALL SCHOOL BUSES IN YOUR SCHOOL WITHIN A YEAR'S TIME _____ MILES
2. TOTAL AMOUNT OF MILES DRIVEN BY SCHOOL BUSES IN TRANSPORTING ATHLETIC TEAMS IN SAME PERIOD OF TIME _____ MILES

KINDLY FILL IN BLANK

NAME
 POSITION
 SCHOOL
 TOWN STATE

Put Paste Here

Put Paste Here

FOLD HERE

FOLD HERE

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 PERMIT No. 9323
 (Sec. 510, P. L. & R.)
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THE ATHLETIC JOURNAL

HOTEL SHERMAN

ATHLETIC HEADQUARTERS IN CHICAGO

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- **EVERY TUESDAY**
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- **EVERY WEDNESDAY**
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PROTECT WHAT YOU HAVE...



Your present stock of Athletic Equipment will apparently have to last you for quite a long time — and the manner in which you take care of it now, will govern how long that time will be. Keep your Supply Room clean and orderly — Take precautions against Moths, Mice and Mildew — Mark everything for easy identification, and place your cleaning and reconditioning problems in the dependable hands of the IVORY SYSTEM.

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